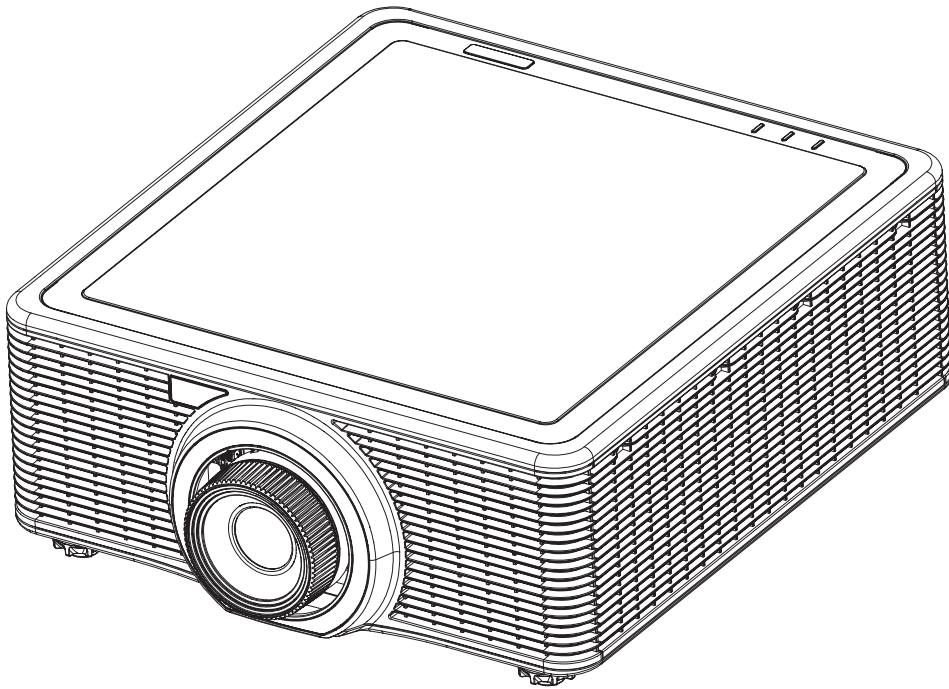# EIKI

Owner's Manual

Multimedia Projector

Model   EK-623U

(Projection lens is optional.)

Features and Design

This Multimedia Projector is designed with the most advanced technology for durability and ease of use. This projector utilizes a high luminance and Eco friendly system, a palette of 1.07 billion colors, and digital light processing (DLP) technology.

Light Weight Design

This projector is designed light in weight. It is easy to install anywhere you wish to use.

Simple Computer System Setting

The projector has the Multi-scan system to conform to almost all computer output signals quickly. Up to WUXGA resolution can be accepted.

Useful Functions for Presentations

The digital zoom function allows you to focus on the crucial information during a presentation.

Laser Diode Control

Brightness of the projection laser diode can be manually selected (Constant Power, Constant Intensity, or Eco Mode (ECO 1 (80%) / ECO 2 (50%))).

Logo Function

The Logo function allows you to specify the screen background ("Factory logo", "Blue", "Black", or "White" screen) when no signal is available.

Multilanguage Menu Display

Operation menu is available in 13 languages; English, Simplified Chinese, French, German, Italian, Japanese, Korean, Russian, Spanish Portuguese, Indonesian, Dutch, and Arabic.

Security Function

The Security function helps you ensure security of the projector.

LAN Network Function

This projector is loaded with the Wired LAN network function. You can operate and manage the projector via network.

For details, refer to page 43 and pages 44-51.

Auto Setup Function

This function enables auto input search and auto signal adjustment simply by pressing the Auto button on the remote control.

Power Management

The Power management function reduces power consumption and maintains the laser diode life.

Note:

The screen menu and pictures in the manual may slightly differ from the real product.
The manual is subject to change without prior notice.

Copyright

Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

Trademark Recognition

All other product names used in this manual are the properties of their respective owners and are acknowledged.

Important Safety Information

> *Important:*
> *It is strongly recommended that you read this section carefully before using the projector. These safety and usage instructions will ensure that you enjoy many years of safe use of the projector. Keep this manual for future reference.*

Symbols Used

Warning symbols are used on the unit and in this manual to alert you of hazardous situations. The following styles are used in this manual to alert you to important information.

> *Note:*
> *Provides additional information on the topic at hand.*

> *Important:*
> *Provides additional information that should not be overlooked.*

> *Caution:*
> *Alerts you to situations that may damage the unit.*

> *Warning:*
> *Alerts you to situations that may damage the unit, create a hazardous environment, or cause personal injury.*

Throughout this manual, component parts and items in the OSD menus are denoted in bold font as in this example:

"Push the **Menu** button on the remote control to open the **Main** menu."

General Safety Information

  ➢ Do not open the unit case. There are no user-serviceable parts in the unit. For servicing, contact qualified service personnel.
  ➢ Follow all warnings and cautions in this manual and on the unit case.
  ➢ The projection laser diode is extremely bright by design. To avoid damage to eyes, do not look into the lens when the laser diode is on.
  ➢ Do not place the unit on an unstable surface, cart, or stand.
  ➢ Avoid using the system near water, in direct sunlight, or near a heating device.
  ➢ Do not place heavy objects such as books or bags on the unit.

Safety Instructions

- Please read this manual completely before installing and operating the projector.
- The projector provides many convenient features and functions. Proper operation may enable you to fully utilize the features and keep it in good condition. Otherwise, it will not only shorten the service life of the unit, but also may cause malfunction, a fire, or other accidents.
- If your projector cannot work properly, please read this manual again, check the operating methods and cable connection, and try the solutions in the part of Troubleshooting. If the problem still exists, contact the dealer or the service center.

Caution:

ELECTRIC SHOCK DO NOT OPEN

Caution:

To reduce the risk of electric shock, do not remove cover (or back), no user serviceable parts inside. Refer servicing to qualified service personnel.

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the user's manual with this unit.


FOR EU USERS

The symbol mark and recycling systems described below apply to EU countries and do not apply to countries in other areas of the world.

Your product is designed and manufactured with high quality materials and components which can be recycled and/or reused.

The symbol mark means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.

Note:

If a chemical symbol is printed beneath the symbol mark, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This will be indicated as follows: Hg: mercury, Cd: cadmium, Pb: lead In the European Union there are separate collection systems for used electrical and electronic equipment, batteries and accumulators.

Please, dispose of them correctly at your local community waste collection/recycling centre.

*Please help us to conserve the environment we live in!*
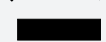
⚠ *Safety Precautions*

> *Caution:*
> • *The projector must be grounded.*
> • *Do not expose the projector to raindrops or high humidity to avoid a fire or electric shock.*

- This projector produces intense light from the projection lens. Avoid staring directly into the lens, otherwise eye damage could be caused. Be especially careful that children do not stare directly into the beam.
- Place the projector in a proper position. Otherwise it may result in fire hazard.
- Leave an appropriate space from the top, sides, and back of the shell in order to ventilate and cool down the projector. The figures below indicate the minimum distance to be left. It must be satisfied if the projector is placed in sealed environment like a cabinet.
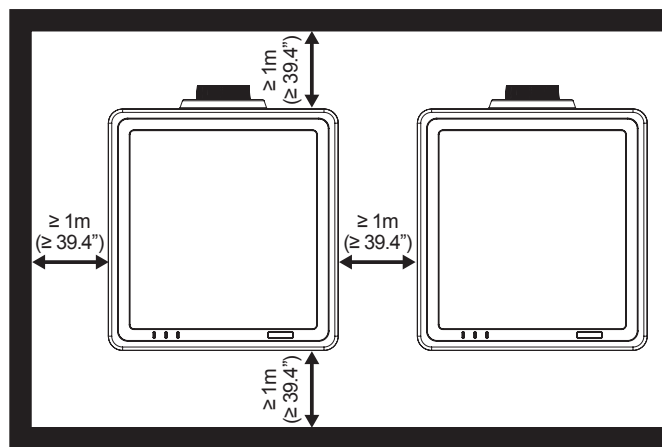
- Do not cover the vent of the projector. Poor radiation may shorten the service life or even cause dangers.
- Remove the AC power plug if the projector is not to be used for a long time.

> ⚠ *Caution:*
> • *Do not set the projector in greasy, wet, or smoky conditions such as in a kitchen, to prevent a malfunction or accident. If the projector comes in contact with oil or chemicals, it may become deteriorated.*
> • *Read and keep this manual for future reference.*
> • *The mains plug/appliance coupler is used as disconnect device, the disconnect device shall remain readily operable.*

Safety Guide

- All the safety and operating instructions should be read before the product is operated.

- Read all of the instructions given here and retain them for later use. Unplug this projector from AC power supply before cleaning. Do not use liquid or aerosol cleaners.

- Use a damp cloth for cleaning.

- Follow all warnings and instructions marked on the projector.

- For added protection to the projector during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage due to lightning and power line surges.

- Do not expose this unit to rain or use near water... for example, in a wet basement, near a swimming pool, etc...

- Do not use attachments not recommended by the manufacturer as they may cause hazards.

- Do not place this projector on an unstable cart, stand, or table. The projector may fall, causing serious injury to a child or an adult, and serious damage to the projector.

- Use only with a cart or stand recommended by the manufacturer, or sold with the projector. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturers.

- An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

- Slots and openings in the back and bottom of the cabinet are provided for ventilation, to ensure reliable operation of the equipment and to protect it from overheating.

- The openings should never be covered with cloth or other materials, and the bottom opening should not be blocked by placing the projector on a bed, sofa, rug, or other similar surface. This projector should never be placed near or over a radiator or heat register.

- This projector should not be placed in a build-in installation such as a book case unless proper ventilation is provided.

- Never push objects of any kind into this projector through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the projector.

- Do not install the projector near the ventilation duct of air-conditioning equipment.

- This projector should be operated only from the type of power source indicated on the marking label.

- If you are not sure of the type of power supplied, consult your authorized dealer or local power company.

- Do not overload wall outlets and extension cords as this can result in fire or electric shock. Do not allow anything to rest on the power cord. Do not locate this projector where the cord may be damaged by persons walking on it.

- Do not attempt to service this projector yourself as opening or removing the covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

- Unplug this projector from wall outlet and refer servicing to qualified service personnel under the following conditions:

  ➢ When the power cord or plug is damaged or frayed.

  ➢ If liquid has been spilled into the projector.

  ➢ If the projector has been exposed to rain or water.

  ➢ If the projector does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the projector to normal operation.

  ➢ If the projector has been dropped or the cabinet has been damaged.

▷ When the projector exhibits a distinct change in performance - this indicates a need for service.

- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or injury to persons.

- Upon completion of any service or repairs to this projector, ask the service technician to perform routine safety checks to determine that the projector is in safe operating condition.

Information for users in the European Union

This is a device to project images onto a screen, etc., and is not intended for use as indoor lighting in a domestic environment.   *Directive 2009/125/EC.*


Air circulation

Vents in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

⚠ *Caution:*

- *Hot air is exhausted from the exhaust vent. When using or installing the projector, the following precautions should be taken.*
- *Do not put any flammable objects, or spray can near the projector. Hot air is exhausted from the air vents.*
- *Keep the exhaust vent at least 1m away from any objects.*
- *Do not touch a peripheral part of the exhaust vent, especially screws and metallic part. This area will become hot while the projector is being used.*
- *Do not put anything on the projector. Objects put on the cabinet will not only get damaged but also may cause fire hazard by heat.*
- *Cooling fans are provided to cool down the projector.*
- *The fan's running speed is changed according to the temperature inside the projector.*

Air Intake Vent   **Exhaust Vent**
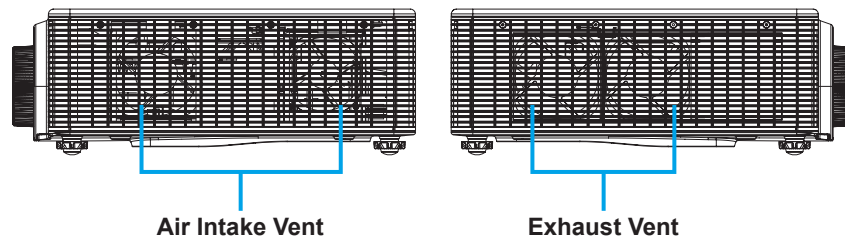
Moving the projector

When moving the projector, take care of the lens and retract the adjustable foot to prevent damage to the lens and cabinet.

### *Installing the projector properly*

- Please set the projector on nearly-level.
- Be sure to install the projector properly. Improper installation may reduce the laser diode lifetime and even cause a fire hazard.

> ⚠ *Caution in ceiling installation the projector*
> - *Only qualified personal is authorized for ceiling installation.*
> - *We are not responsible for the hurt and damage caused by ceiling bracket that purchased from unauthorized dealer even in warranty period.*
> - *Remove the ceiling bracket immediately while not use.*
> - *While installing, torque screwdriver is suggested, don't use electric or impact-type screwdriver.*
> - *Please read the manual of bracket for details.*
> - *The bracket is subject to change without notice.*
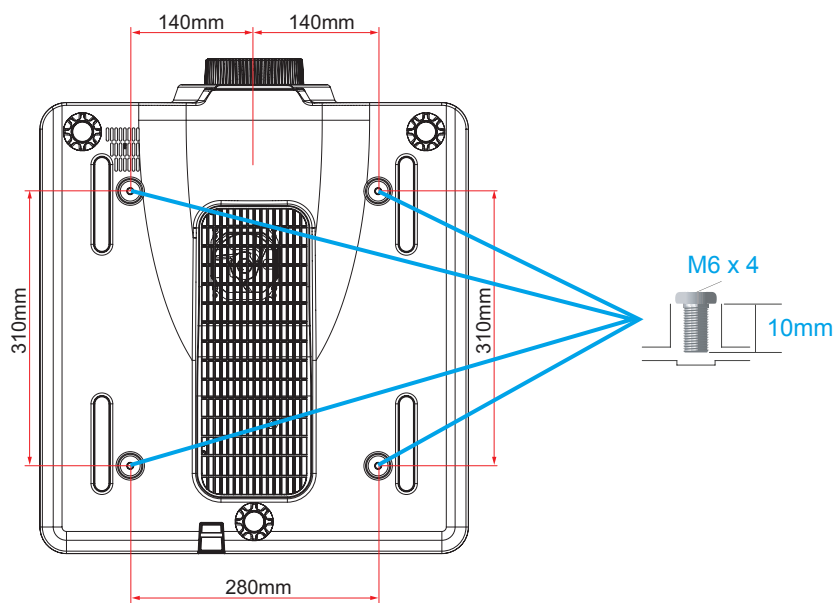
⚠️ ***Caution in moving or transporting the projector***

- *Do not drop or bump the projector, otherwise damages or malfunctions may result.*
- *When carrying the projector, use a suitable carrying case.*
- *Do not transport the projector by courier or any other transport service in an unsuitable transport case. This may cause damage to the projector. For information about transporting the projector by courier or any other transport service, consult your dealer.*

Laser Radiation Safety Information

This product is classified as CLASS 1 LASER PRODUCT - RISK GROUP 2 according to IEC 60825-1 : 2014 complies with FDA regulations 21 CFR 1040.10 and 1040.11 as a Risk Group 2 , LIP (Laser Illuminated Projector) as defined in IEC 62471:2006 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

IEC 60825-1:2014 CLASS 1 LASER PRODUCT RISK GROUP 2
Complies with 21 CFR 1040.10 and 1040.11 as a Risk Group 2, LIP
(Laser Illuminated Projector) as defined in IEC 62471:2006 except for deviations
pursuant to Laser Notice No. 50, dated June 24, 2007
CAUTION
Possibly hazardous optical radiation emitted from this product. Do not stare at
operating beam. May be harmful to the eyes.

IEC 60825-1:2014 PRODUIT LASER DE CLASSE 1 GROUPE DE RISQUE 2
Conforme aux normes 21 CFR 1040.10 et 1040.11 comme Groupede risque 2,
projecteur laser (LIP, Laser Illuminated Projector) défini par CEI 62471:
2006 sauf les exceptions citées dans le document Laser Notice N°.50, daté du 24 Juin 2007.
AVERTISSEMENT
Rayonnement optique dangereux potentiel émis par ce produit. Ne pas regarder
directement dans le faisceau. Ceci pourrait être nocif pour les yeux.

IEC 60825-1:2014 1类激光产品RG2危险等级
除了根据激光公告第50号,日期2007年6月24日之差异外,符合 21 CFR 1040.10和1040.11同
IEC 62471:2006所定义之LIP (激光照明投影机）RG2危险等级.
注意
此产品可能会产生危险激光辐射·请勿直视操作光束，以免对眼睛损害·

Warning! Failure to comply with the following could result in death or serious injury.

- This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the projector.
- Any operation or adjustment not specifically instructed in the User manual creates the risk of hazardous laser radiation exposure.
- Do not open or disassemble the projector as this may cause damage or exposure to laser radiation.
- Do not stare into beam when the projector is on. The bright light may result in permanent eye damage.
- When turning on the projector, make sure no one within projection range is looking into the lens.
- Follow the control, adjustment, or operation procedures to avoid damage or injury from exposure of laser radiation.
- The instructions for the assembly, operation, and maintenance include clear warnings concerning precautions to avoid possible exposure to hazardous laser radiation.

Compliance

FCC Caution

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cable is required to comply with class A limits in Subpart B of Part 15 of FCC Rules.

Do not make any changes or modifications to the equipment unless otherwise specified in the instructions. If such changes or modifications should be made, you could be required to stop operation of the equipment.

Model Number : EK-623U

Trade Name : EIKI

Responsible party : EIKI International, Inc.

Address : 30251 Esperanza Rancho Santa Margarita CA 92688-2132

Telephone No. : 800-242-3454 (949-457-0200)

> **Note:**
> *For use in a commercial, industrial or business environment.*
> *Not for domestic use.*

AC Power Cord Requirement

The AC Power Cord supplied with this projector meets the requirement for use in the country you purchased it.

AC Power Cord for the United States and Canada:

AC Power Cord used in the United States and Canada is listed by the Underwriters Laboratories (UL) and certified by the Canadian Standard Association (CSA).

AC Power Cord has a grounding-type AC line plug. This is a safety feature to be sure that the plug will fit into the power outlet. Do not try to defeat this safety feature. Should you be unable to insert the plug into the outlet, contact your electrician.

> **Warning:**
> *A plug with bared flexible cord is hazardous if engaged in a live socket outlet.*

The Wires in this mains lead are coloured in accordance with the following code:

- Green-and-yellow .... Earth
- Blue .... Neutral
- Brown .... Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

- The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured green or green-and-yellow.
- The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

> *Warning:*
> *This apparatus must be earthed.*

> *Note:*
> *The socket-outlet should be installed near the equipment and easily accessible.*
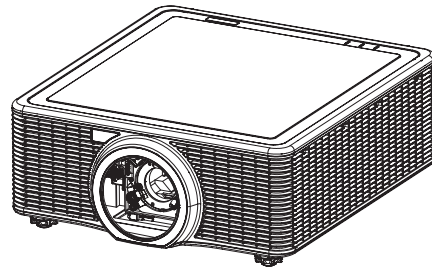
Contents

Getting Started

Packing Checklist

Carefully unpack the projector and check that the following items are included:

DLP PROJECTOR
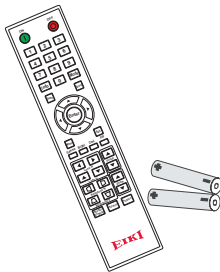
REMOTE CONTROL

(WITH TWO AAA BATTERIES)
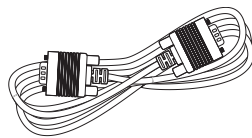
VGA CABLE
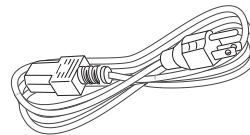
POWER CORD

* *For other regions except China: POWER CORD x 2 (US and EU)*

* *For China: POWER CORD x 1*
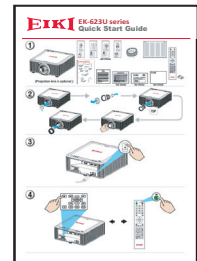
QUICK START GUIDE
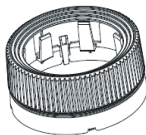
LENS COVER

* *For A01, A03, and A13 lens*

CD-ROM
(THIS OWNER'S MANUAL)
for China

SAFETY GUIDE
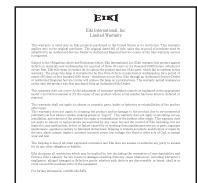
WARRANTY CARD
for USA
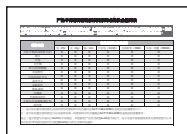
RoHS CARD
for China

QC PASS CARD
for China
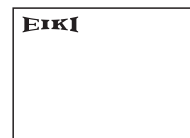
WARRANTY CARD
for China

Contact your dealer immediately if any items are missing, appear damaged, or if the unit does not work. It is recommend that you keep the original packing material should you ever need to return the equipment for warranty service.

> **Note:**
> • *Avoid using the projector in dusty environments.*

Views of Projector Parts

Front-right View
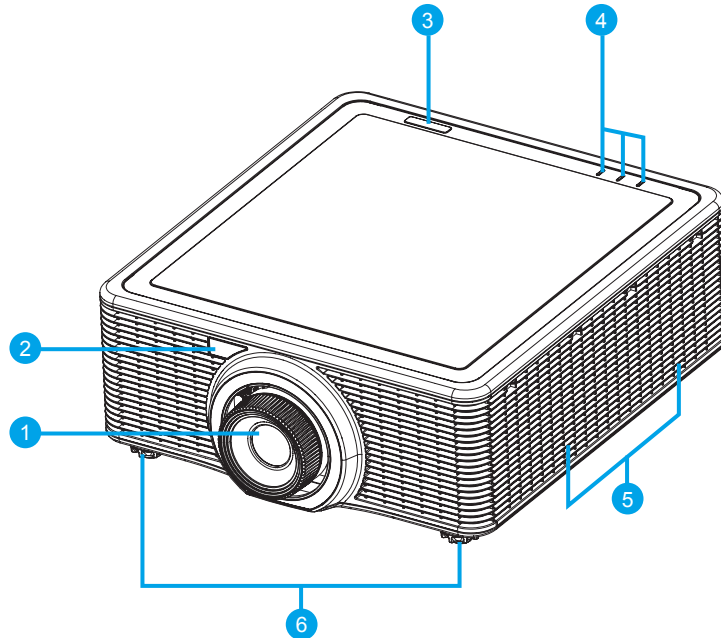
Item	Label	Description	See page
1	Projection Lens	Allows automated lens control and adjustment: vertical and horizontal offsets, zoom and focus.	-
2	Front IR Sensor	Receives signals from the IR remote. Keep the signal path to the sensor unobstructed for uninterrupted communication with the projector.	6
3	Top IR Sensor		
4	LED Status Indicators	Displays the status of the projector.	56
5	Cooling Air Vents (Intake)	Keep these vents unobstructed to prevent the projector from overheating.	-
6	Adjustable Feet	Raise or lower the feet to level the projector.	13

Important:

Ventilation openings on the projector allow for good air circulation, which keeps the projector laser diode cool. Do not obstruct any of the ventilation openings.

Rear View
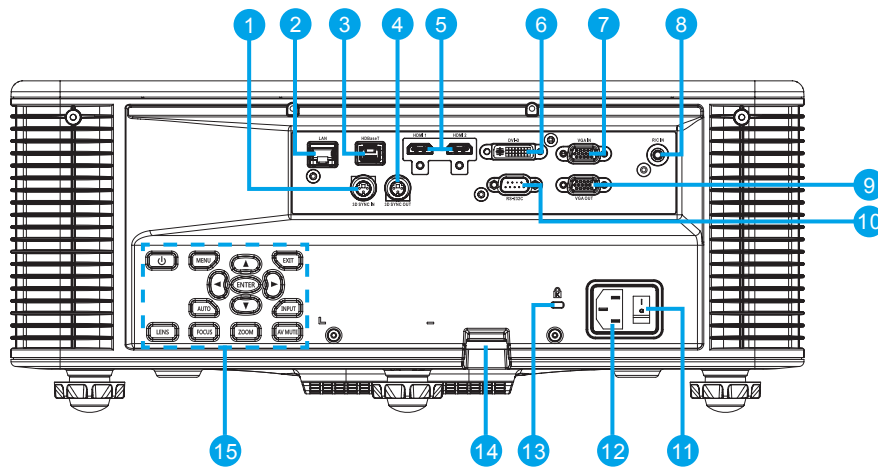
Item	Label	Description	See page
1	3D SYNC IN	Connect 3D SYNC IN cable from your PC or other applicable device.	-
2	LAN	Connect a LAN cable from Ethernet.	-
3	HDBaseT	Connect a RJ45 Cat5/Cat6 Ethernet cable to input uncompressed high-definition video control signals.	-
4	3D SYNC OUT	Connect the 3D IR glasses transmitter (Note: For Specific 3D IR glasses only)	-
5	HDMI IN (HDMI1 / HDMI2)	Connect the HDMI cable from a HDMI device.	-
6	DVI-D	Connect to DVI source.	-
7	VGA IN	Connect the VGA cable from a computer or component device.	-
8	Remote IN (R/C IN)	Connect to the remote control wired terminal for serial control projector.	-
9	VGA OUT	Connect the VGA cable to a display.	
10	RS-232C	Connect RS-232 serial port cable for remote control.	
11	Power Switch	Switch the power button to turn on/off the power source.	12
12	AC Input	Connect to the supplied power adapter.	12
13	Kensington Lock	Use to secure the projector to countertops, tables, etc.	54
14	Security Bar	Use to secure the projector.	-
15	Built-in Keypad	Control the projector.	4

Note:
- *To use this feature, you must plug in the power adapter/cable/cord before turn on/off the projector.*
- *Do not use this jack for anything other than intended use.*

Warning:
As a safety precaution, disconnect all power to the projector and connecting devices before making connections.

Built-in Keypad
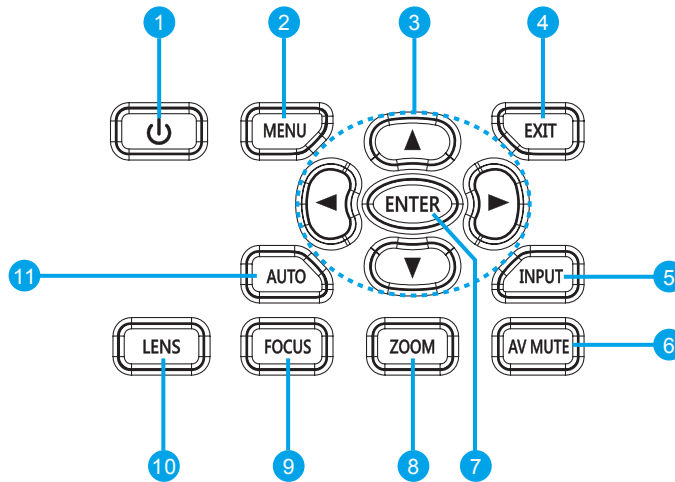
Item	Label	Description	See page
1	Power	Turn the projector on or off.	12
2	Menu	Display menus.	20
3	Arrow keys	• Adjust a setting UP/DOWN or RIGHT/LEFT. • Navigate within a menu.	20
4	Exit	Return to previous level or exit menus if at top level.	20
5	Input	Select an input for the main or PIP/PBP image.	-
6	AV Mute	Display or blank the video image.	-
7	Enter	• Select a highlighted menu item. • Change or accept a value.	20
8	Zoom	Adjust zoom.	14
9	Focus	Adjust focus.	14
10	Lens	Adjust the lens vertical or horizontal offset setting.	-
11	Auto	Automatically optimize image.	-

Bottom View
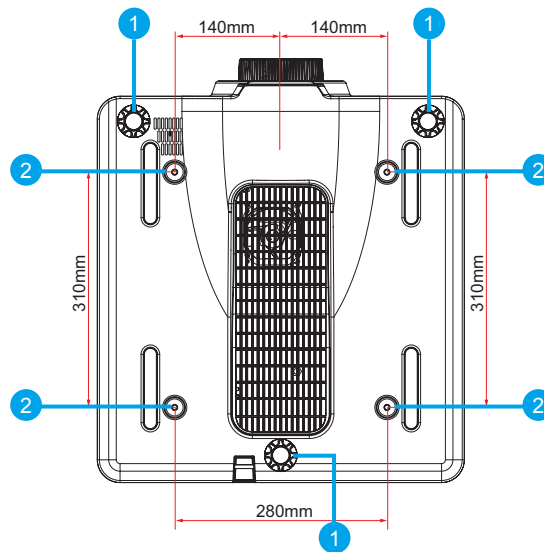
Item	Label	Description	See page
1	Adjustable Feet	Raise or lower the feet to level the projector.	13
2	Ceiling support holes	Contact your dealer for information on mounting the projector on a ceiling.	-

> ***Note:***
>
> • *When installing, ensure that you use only UL Listed ceiling mounts.*
> • *For ceiling installations, use approved mounting hardware and M6 screws with a maximum screw depth of 10 mm (0.39 inch).*
> • *The construction of the ceiling mount must be of a suitable shape and strength. The ceiling mount load capacity must exceed the weight of the installed equipment, and as an additional precaution be capable of withstanding three times the weight of the equipment over a period of 60 seconds.*

Remote Control Parts
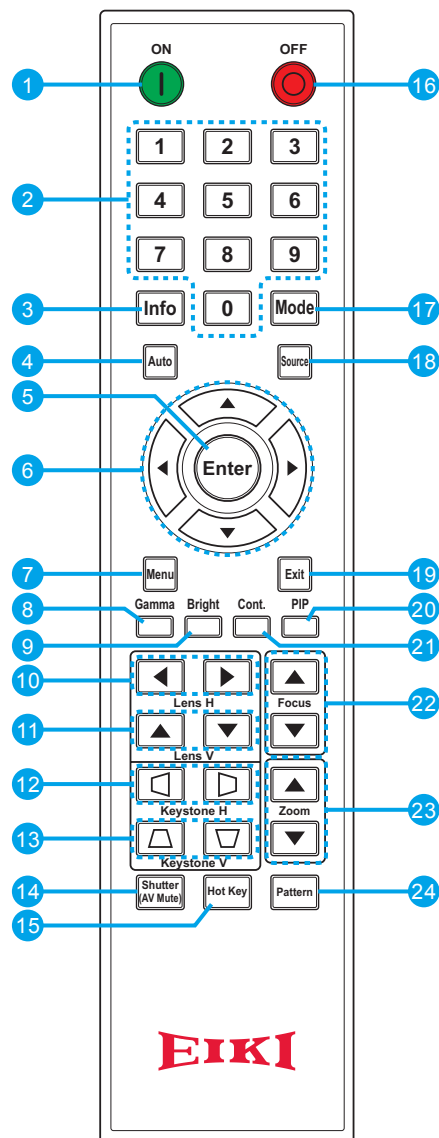
Important:

1. Avoid using the projector with bright fluorescent lighting turned on. Certain high-frequency fluorescent lights can disrupt remote control operation.

2. Be sure nothing obstructs the path between the remote control and the projector. If the path between the remote control and the projector is obstructed, you can bounce the signal off certain reflective surfaces such as projector screens.

3. The buttons and keys on the projector have the same functions as the corresponding buttons on the remote control. This owner's manual describes the functions based on the remote control.

Note:

Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

Item	Label	Description	See page
1	Power on	Turn projector ON.	12
2	Number Keys	Enter a number (such as PIN code) or source hotkey. Source Hotkey Key: 1: VGA 2: HDMI-1 3: HDMI-2 4: DVI 5: HDBaseT	-
3	Info	Display source image information.	-
4	Auto	Automatically optimize image.	-
5	Enter	• Select a highlighted menu item. • Change or accept a value.	20
6	Arrow Keys	• Adjust a setting UP/DOWN or RIGHT/LEFT. • Navigate within a menu.	20
7	Menu	Display menus.	20
8	Gamma	Adjust mid-range levels.	-
9	Bright	Adjust amount of light in the image.	-
10	Lens H	Adjust the position of the image horizontally.	-
11	Lens V	Adjust the position of the image vertically.	-
12	Keystone H	Adjust the horizontal keystone.	14
13	Keystone V	Adjust the vertical keystone.	14
14	Shutter (AV Mute)	Display or blank the video image.	-
15	Hot Key	Select your preset keys quickly.	-
16	OFF	Turn projector OFF.	12
17	Mode	Select the preset display mode.	-
18	Source	Select an input for the main or PIP/PBP image.	-
19	Exit	Return to previous level or exit menus if at top level.	20
20	PIP	Turn PIP/PBP ON/OFF.	-
21	Cont.	Adjust difference between dark and light.	-
22	Focus	Adjust focus to improve image clarity as desired.	14
23	Zoom	Adjust zoom to achieve a desired image size.	14
24	Pattern	Display a test pattern.	-

⚠ **Caution:**

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Remote Control Operating Range

The remote control uses infrared transmission to control the projector. It is not necessary to point the remote directly at the projector. Provided you are not holding the remote perpendicular to the sides or the rear of the projector, the remote will function well within a radius of about 10 meters (32.8 feet) and 30 degrees above or below the projector level. If the projector does not respond to the remote control, move a little closer.

Projector and Remote Control Buttons

The projector can be operated using the remote control or the buttons on the rear of the projector. All operations can be carried out with the remote control; however, the buttons on the projector are limited in use.

Remote Control Code

The ten different remote control codes (Code 0- Code 9) are assigned to this projector. Switching the remote control codes prevents interference from other remote controls when several projectors or video equipment next to each other are being operated at the same time. Change the remote control code for the projector first before changing that for the remote control. See "Remote Settings → Projector Address" in the Options Menu on page 39.

To change the code for the Remote Control:

Press and hold the **Mode** button and a number button (0-9) on the remote control for more than three seconds to switch among the codes.
Default setting: 0

To change the Projector Address for the projector:

Select a Projector Address in the Options Menu. (Options → Remote Settings → Projector Address)

Inserting the Remote Control Batteries

1. Remove the battery compartment cover as shown in the illustration.
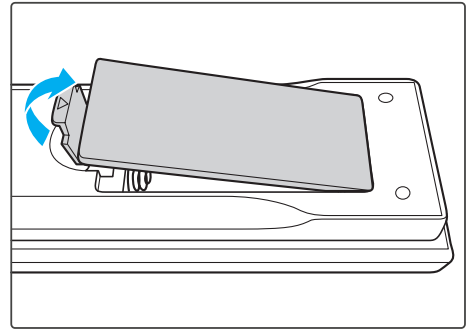
2. Insert the batteries with correct polarity (+/-) as shown inside the battery compartment.
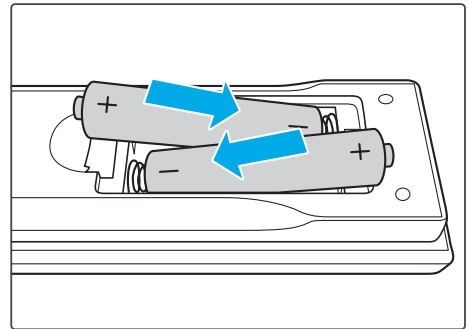
3. Replace the cover.
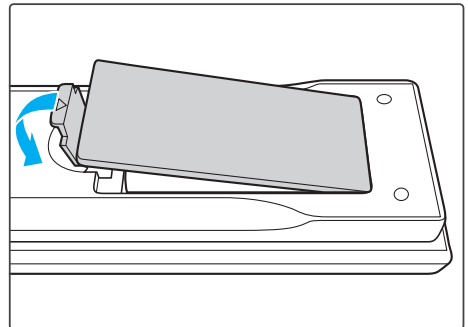
Caution:
- *Only use AAA batteries (Alkaline batteries are recommended).*
- *Dispose of used batteries according to local ordinance regulations.*
- *Remove the batteries when not using the projector for prolonged periods.*

Setup and Operation

Installing the Projection Lens

Before setting up the projector, install the projection lens on the projector.

Important:
*   *Before installation, check where the projector is used and prepare a suitable lens.*
*   *For details, contact the sales dealer where you purchased the projector.*

1. Press " " on the built-in keypad or press " " on the remote control twice to turn off the projector.

2. Rotate the lens cap counter-clockwise. Then remove the lens cap.
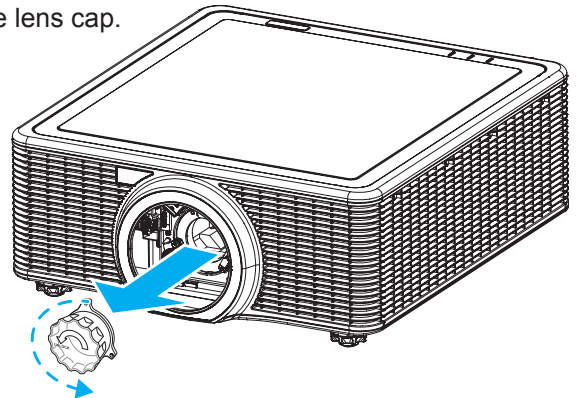
3. Remove both lens caps (front and back) on the lens.
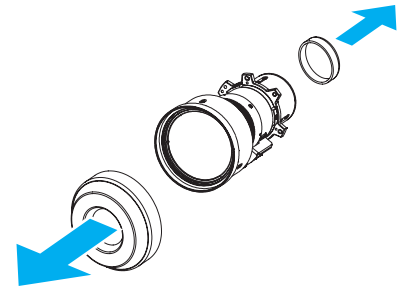
4. With the label "TOP" on the lens assembly facing up, install the assembly into the lens mount.

TOP
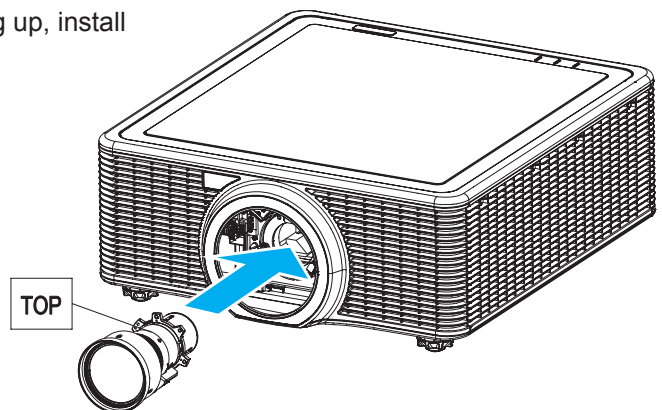
5. Rotate the lens clockwise to lock the lens in place.
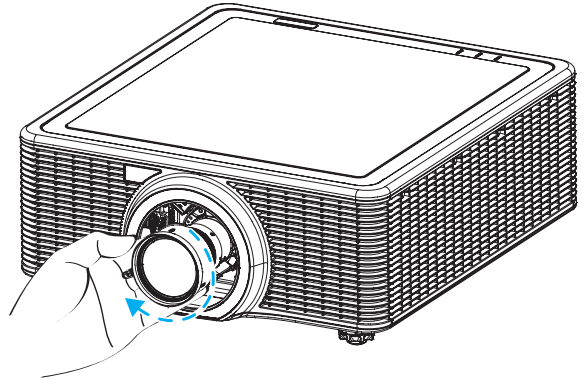
6. Firmly install the lens cover onto the lens.
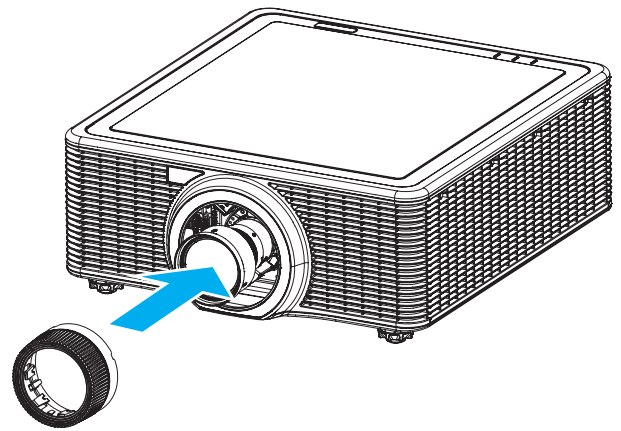
Starting and Shutting down the Projector

Turn On the Projector

1. Connect the power cord to the projector. Then connect the other end to a wall outlet. The Power button on the built in keypad is illuminated.
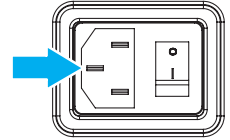
> ***Important:***
> *Make sure that the Power switch is in the ON position.*

2. Turn on the connected devices.

3. Turn on the projector by pressing "⬤" on the remote control or press "⏻" on the built-in keypad. The Status LED is Orange with a long blink.

The projector splash screen displays and connected devices are detected.

4. If more than one input device is connected, press the **Source** key on the remote control to select an input source (VGA, HDMI-1, HDMI-2, DVI, or HDBaseT).

5. The projector detects the source you selected and displays the image.

Turn Off the Projector

1. Press "⏻" on the built-in keypad or press "⬤" on the remote control to turn off the projector. A warning message will appear on the displayed image.

2. Press "⏻" on the built-in keypad or press "⬤" on the remote control again to confirm your selection. If you do not press "⏻" or "⬤" again, the warning message will disappear after several seconds.

> ***Caution:***
> *Do not unplug the power cord until all of fans are stop–indicating the projector has cooled down.*

Adjusting the Projector Level

Take note of the following when setting up the projector:

- The projector table or stand should be level and sturdy.
- Position the projector so that it is perpendicular to the screen.
- Ensure the cables are in a safe location. You could trip over them.
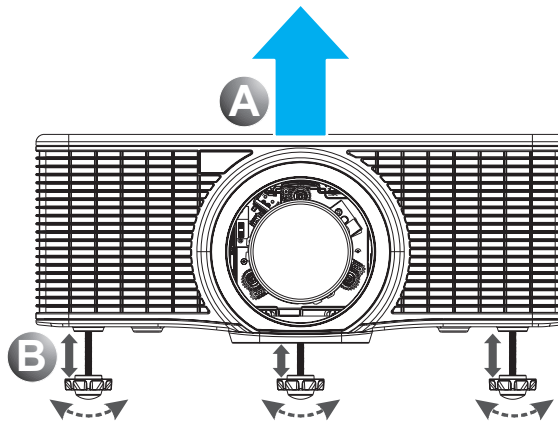
1. To raise the level of the projector, lift the projector (A).

2. Locate the adjustable foot you wish to modify on the underside of the projector.

3. Rotate the adjustable foot clockwise to raise the projector or counter-clockwise to lower it. Repeat with the remaining feet as necessary (B).

Adjusting the Zoom, Focus, and Keystone

1. Use the **Zoom** button to resize the projected image and screen size **B**.

2. Use the **Focus** button to sharpen the projected image **A**.
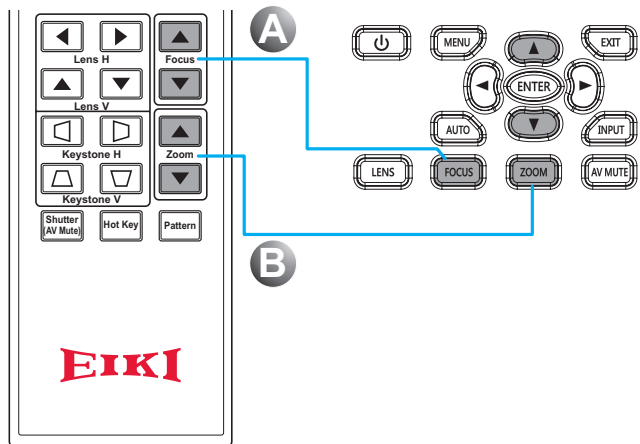
3. Use the **Keystone H** buttons (on the remote control) to adjust the keystone horizontally and make a squarer image. Use the **Keystone V** buttons (on the remote control) to adjust keystone vertically and make a squarer image.
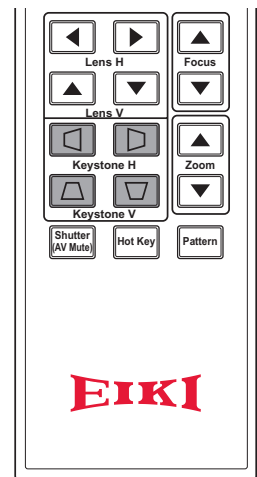
Using the Lens Shift Adjustment

The projection lens can be moved up, down, right, and left with the motor-driven lens shift function. This function makes the positioning of images easy on the screen. Lens shift is generally expressed as a percentage of the image height or width, see below illustration.

Vertical / Horizontal Lens Shift

Vertical Image Offset: 0% Offset (WUXGA)

No offset is applied - 0% offset.

Half of the image appears above lens center and half of the image appears below lens center.

600 pixels above lens center.

Lens center

600 pixels above lens center.

Vertical Image Offset: 100% Offset (WUXGA)

Image has been offset 600 pixels above lens center, so the center of the image is now 600 pixels above where the center of the image was at 0% offset (or lens center).

The offset is +600/600 * 100% = +100%

600 pixels of shift above lens center.

Lens center

Vertical Image Offset: -100% Offset (WUXGA)

Image has been offset 600 pixels below lens center, so the image has an offset of -600/600 * 100% = -100%

Lens center

600 pixels of shift below lens center.

Total of 600 pixels of display are below lens center.

Horizontal Image Offset: +/-30% Offset (WUXGA)

-288 pixels   1920 pixels   +288 pixels

Lens center

Image has been offset 288 pixels left or right of lens center.

The image has an offset of +288/960 * 100% = +30%, or -288/960 * 100% = - 30%
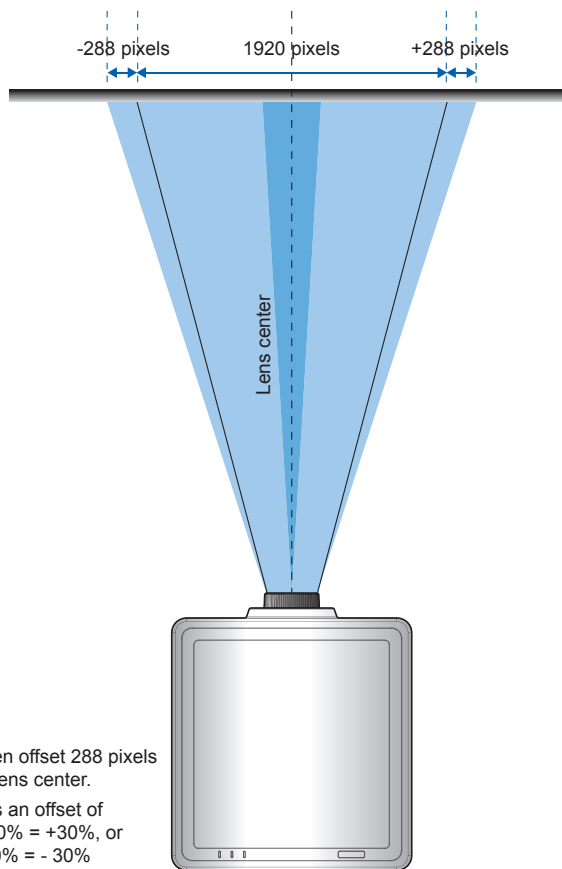
Optional Lenses and Projection Size

Projection Lens

The complete projection lens series as below table.

Item	Lens Type						
Lens Model Name	A16 (AH-A25010)	A15 (AH-A22010A)	A01 (AH-A22020)	A02 (AH-A22030)	A05 (AH-A22040)	A03 (AH-A21010)	A13 (AH-A23010)
Focal Length (f)	9.49-9.55	11.11-14.06	14.03-17.96	18.07-22.59	18.07-22.59	22.56-42.87	42.60-80.90
F number	2.4	2.30-2.53	2.30-2.57	2.00-2.32	2.00-2.32	2.30-3.39	2.30-2.74
Focus spec (MTF)	67 lp/mm	67 lp/mm	67 lp/mm	47 lp/mm	67 lp/mm	67 lp/mm	67 lp/mm
Zoom Range (Ratio)	No Zoom	1.26X	1.28X	1.25X	1.25X	1.9X	1.9X
Zoom & Focus Adjustment	Motorized						
Throw Ratio	0.361 (120")	0.75-0.95	0.95-1.22	1.22-1.53	1.22-1.53	1.52-2.92	2.90-5.50
Throw Distance	0.96-2.65m	0.79-6.21m	1.01~7.98m	1.30~9.96m	1.30~9.96m	1.61~19.00m	3.18~34.77m
Projection Image Size	120"~350"	50~300"					

Motorized Lens Shift (Lens shift range based on screen width and height)	Horizontal: ±15% Vertical: ±50%				
	Projection Lens	H	V	△H	△V
	A01, A03, A13	15%	50%	15%	50%
	A02, A05	15%	50%	10%	40%
	A15	15%	50%	1%	25%

A01/A03/A13 lens shift range:

A02/A05/A15 lens shift range:

Motorized Lens Shift

(Lens shift range based on screen width and height)

Lens shift accuracy: 0.5 pixel per step

When the lens is shifted beyond the described range of operation, the screen edges may become darker or the images may become out of focus.

Other Optional Parts:

Part Number	Item
AH-B34030	Wired Remote Cable

Projection Size v.s Throw Distance

DMD			0.67"											
Projection Lens			A16	A15		A01		A02		A05		A03		A13	
Throw Ratio			0.361 (120")	0.75-0.95		0.95-1.22		1.22-1.53		1.22-1.53		1.52-2.92		2.90-5.50	
Zoom Ratio			NA	1.26X		1.28X		1.25X		1.25X		1.9X		1.9X	
Throw Distance			0.96~2.65m	0.79-6.21m		1.01~7.98m		1.30~9.96m		1.30~9.96m		1.61~19.00m		3.18~34.77m	
Projection Screen Size			**Throw distance (m)**												
Diagonal (inch)	Height (m)	Width (m)	(m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)
50	0.67	1.08	NA	0.79	1.01	1.01	1.31	1.30	1.63	1.30	1.63	1.61	3.12	3.18	5.89
60	0.81	1.29	NA	0.96	1.22	1.22	1.57	1.57	1.97	1.57	1.97	1.94	3.76	3.78	7.05
70	0.94	1.51	NA	1.12	1.43	1.43	1.84	1.83	2.30	1.83	2.30	2.27	4.39	4.39	8.20
80	1.08	1.72	NA	1.28	1.64	1.63	2.11	2.10	2.63	2.10	2.63	2.60	5.03	5.00	9.36
90	1.21	1.94	NA	1.45	1.85	1.84	2.38	2.36	2.97	2.36	2.97	2.94	5.66	5.61	10.51
100	1.35	2.15	NA	1.61	2.05	2.05	2.64	2.63	3.30	2.63	3.30	3.27	6.30	6.21	11.67
110	1.48	2.37	NA	1.78	2.26	2.26	2.91	2.90	3.63	2.90	3.63	3.60	6.93	6.82	12.82
120	1.62	2.58	0.96	1.94	2.47	2.47	3.18	3.16	3.97	3.16	3.97	3.94	7.57	7.43	13.98
130	1.75	2.80	1.04	2.10	2.68	2.67	3.44	3.43	4.30	3.43	4.30	4.27	8.20	8.04	15.13
140	1.88	3.02	1.11	2.27	2.89	2.88	3.71	3.69	4.63	3.69	4.63	4.60	8.84	8.65	16.29
150	2.02	3.23	1.18	2.43	3.09	3.09	3.98	3.96	4.96	3.96	4.96	4.94	9.47	9.25	17.44
160	2.15	3.45	1.26	2.60	3.30	3.30	4.24	4.23	5.30	4.23	5.30	5.27	10.11	9.86	18.60
170	2.29	3.66	1.33	2.76	3.51	3.51	4.51	4.49	5.63	4.49	5.63	5.60	10.74	10.47	19.75
180	2.42	3.88	1.40	2.92	3.72	3.72	4.78	4.76	5.96	4.76	5.96	5.93	11.38	11.08	20.91
190	2.56	4.09	1.48	3.09	3.93	3.92	5.05	5.02	6.30	5.02	6.30	6.27	12.01	11.69	22.06
200	2.69	4.31	1.55	3.25	4.13	4.13	5.31	5.29	6.63	5.29	6.63	6.60	12.65	12.29	23.22
250	3.37	5.38	1.91	4.07	5.17	5.17	6.65	6.62	8.29	6.62	8.29	8.27	15.82	15.33	28.99
300	4.04	6.46	2.28	4.89	6.21	6.21	7.98	7.95	9.96	7.95	9.96	9.93	19.00	18.37	34.77
350	4.71	7.54	2.65	NA											

On-Screen Display (OSD) Menu Settings

OSD Menu Controls

The projector has an OSD that lets you make image adjustments and change various settings.

Navigating the OSD

You can use the remote control cursor buttons or the projector keypad to navigate and make changes to the OSD.
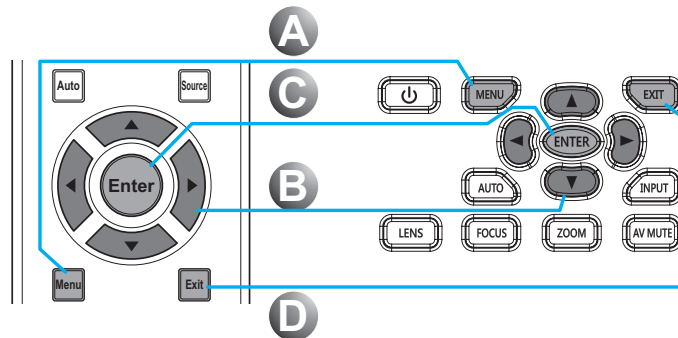
1. To enter the OSD, press the **Menu** button Ⓐ.

Picture		
Display Mode	Presentation	
Wall Color	White	
Brightness	50	
Contrast	50	
Sharpness	5	
Color	50	
Tint	50	
Gamma	Video	
White Peaking	50	
Color Temperature	Bright	
Color Wheel Speed	3x	
HSG Adjustment	⇨	
Contrast Enhancement	Off	
Color Space	Auto	
Save to User	⇨	
Select ⬍	Enter ▶	Exit Menu
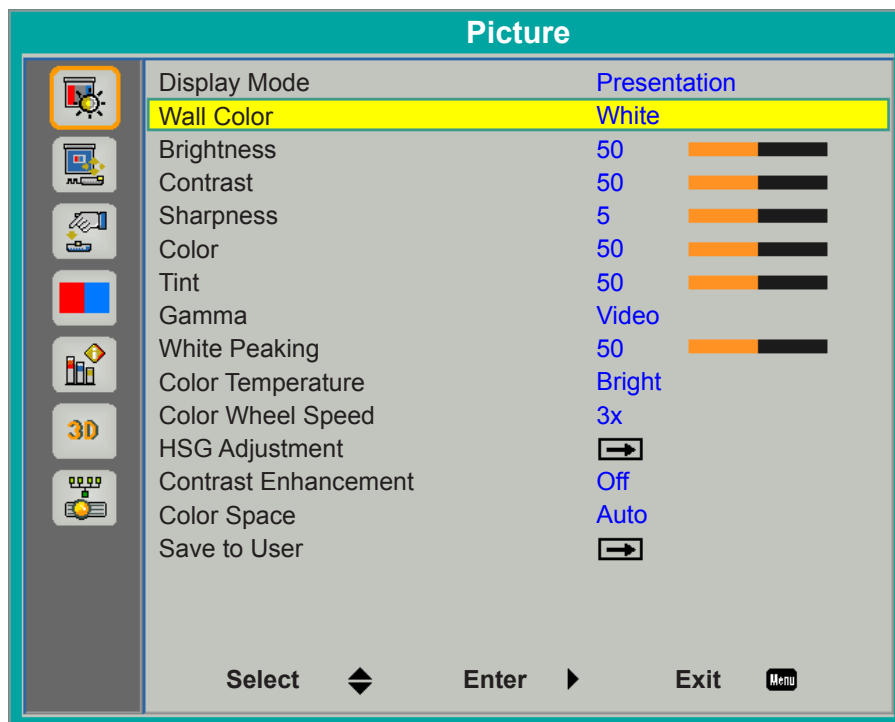
2. Use the arrow keys (▲▼◀▶) to navigate within the menu and adjust a setting up or down Ⓑ.

3. Press the **Enter** button to enter the submenu or confirm the selection/setting Ⓒ.

4. Press the **Exit** button to return to the previous menu or exit menus if at top level Ⓓ.

> *Caution:*
>
> *Depending on the video source, not all items in the OSD are available. Items that are not available cannot be accessed and are grayed out.*

Setting the OSD Language

Set the OSD language to your preference before continuing.

1. Press the **Menu** button.

Picture		
Display Mode	Presentation	
Wall Color	White	
Brightness	50	
Contrast	50	
Sharpness	5	
Color	50	
Tint	50	
Gamma	Video	
White Peaking	50	
Color Temperature	Bright	
Color Wheel Speed	3x	
HSG Adjustment	➡	
Contrast Enhancement	Off	
Color Space	Auto	
Save to User	➡	

Select ⬍ Enter ▶ Exit [Menu]

2. Use the arrow keys (▲▼) to select **Settings** and press the **Enter** button to enter the **Settings** menu.

Settings	
Language	English
Menu Location	▣
Standby Power Mode	Communication mode
Test Pattern	Checkerboard
Direct Power On	Off
Hot-Key Settings	Blank Screen
Reset to Default	➡
Service	➡

Select ⬍ Enter ▶ Exit [Menu]

3. Use the arrow keys (▲▼) to select **Language** and press the **Enter** button to enter its submenu.

4. Use the arrow keys (▲▼) to select the desired language and press the **Enter** button to confirm.

5. Press the **Exit** button to exit the menu.

OSD Menu Overview

Use the following illustration to quickly find a setting or determine the range for a setting.

Main Menu Tree 1st level	2nd level	3rd level	4th level	Default Value	Range
Picture	Display Mode	Bright		depend on signal type and change Color Mode to User Mode if customer changes the settings	
		Presentation			
		Movie			
		sRGB			
		Blending			
		DICOM SIM.			
		User			
	Wall Color	White		White	
		Gray 130			
	Brightness			depend on color mode	0 ~ 100
	Contrast			depend on color mode	0 ~ 100
	Sharpness			5	0 ~ 10
	Color			VGA component signal only	0 ~ 100
	Tint			VGA component signal only	0 ~ 100
	Gamma	Video		depend on color mode	
		Film			
		Bright			
		CRT			
		DICOM			
	White Peaking				0 ~ 100
	Color Temperature	Warm		Bright	
		Bright			
		Cool			
	Color Wheel Speed	2X			3X
		3X			
	HSG Adjustment	Red	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199
		Green	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199
		Blue	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199
		Cyan	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199

MainMenuTree 1st level	2nd level	3rd level	4th level	Default Value	Range
Picture	HSG Adjustment	Magenta	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199
		Yellow	Hue		1~199
			Saturation		0 ~ 199
			Gain		1 ~ 199
		White Gain	Red		1 ~ 199
			Green		1 ~ 199
			Blue		1 ~ 199
		Reset to Default			
	Contrast Enhancement	Off		Off	
		Dynamic Black			
		Extreme Black			
	Color Space	Auto		Auto	
		RGB (0-255)			
		RGB (16-235)			
		YUV			
	Save to User	Yes/No			
Screen	Aspect Ratio	Auto		Auto	
		4:3			
		16:9			
		16:10			
		Native			
	Pixel Phase			analog only	0 ~ 100
	Pixel Track			analog only	0 ~ 100
	Horz Position			analog only	0 ~ 100
	Vert Position			analog only	0 ~ 100
	Digital Horz Zoom			0	0 ~ 10
	Digital Vert Zoom			0	0 ~ 10
	Digital Horz Shift			50	0 ~ 100
	Digital Vert Shift			50	0 ~ 100
	Ceiling Mount	Off		Auto	
		On			
		Auto			
	Rear Projection	Off		Off	
		On			
	Geometric Correction	H. Keystone		20	0~40
		V. Keystone		20	0~40
		4-Corner	Top Left Horz Adjust		
			Top Left Vert Adjust		
			Top Right Horz Adjust		
			Top Right Vert Adjust		

MainMenuTree 1st level	2nd level	3rd level	4th level	Default Value	Range
Screen	Geometric Correction	4-Corner	Bottom Left Horz Adjust		
			Bottom Left Vert Adjust		
			Bottom Right Horz Adjust		
			Bottom Right Vert Adjust		
		Grid Color	Purple	Green	
			Green		
		Reset	Yes		
			No		
	PIP-PBP	PIP/PBP Enable	Off	Off	
			PBP		
			PIP		
		Main Source	VGA	Current Source	
			HDMI-1		
			HDMI-2		
			DVI		
			HDBaseT		
		Sub Source	VGA	Depend on current source	
			HDMI-1		
			HDMI-2		
			DVI		
			HDBaseT		
		Layout	Top Left	Top Left	
			Top Right		
			Bottom Left		
			Bottom Right		
		Size	Small	Medium	
			Medium		
			Large		
		Swap			
	Source Key	Change Sources		Auto Source	
		List all Sources			
		Auto Source			
	Auto Image	Normal		Wide	
		Wide			
	Source Info	Active Source			
		Signal Format			
		Aspect Ratio			
		Resolution			
		Vert Refresh			
		Horz Refresh			

Main Menu Tree 1st level	2nd level	3rd level	4th level	Default Value	Range
Screen	Source Info	Pixel Clock			
		Sync Type			
		Color Space			
		PIP/PBP (When PIP/PBP active)			
		<PIP/PBP source lines> (When PIP/PBP active)			
Settings	Language	English		English	
		Simplified Chinese			
		French			
		German			
		Italian			
		Japanese			
		Korean			
		Russian			
		Spanish			
		Dutch			
		Portuguese			
		Indonesian			
		Arabic			
	Menu Location	Left Top		Left Top	
		Right Top			
		Center			
		Left Bottom			
		Right Bottom			
	Standby Power Mode	0.5W mode		Communication mode	
		Communication mode			
	Test Pattern	None		None	
		Grid			
		White			
		Black			
		Checkerboard			
		Color Bars			
	Direct Power On	Off		Off	
		On			
	Hot-Key Settings	Blank Screen		Blank Screen	
		Aspect Ratio			
		Freeze Screen			
		Projector Info			
	Reset to Default	Yes			
		No			
	Service				
Light Source	Light Source Mode	Constant Power		Constant Power	
		Constant Intensity			
		ECO 1			
		ECO 2			

Main Menu Tree 1st level	2nd level	3rd level	4th level	Default Value	Range
Light Source	Constant Power	0 to 99		99	0 to 99
	Light Source Info	Total Projector Hours			
		LD Hours			
Options	Background Color	Logo		Logo	
		Blue			
		Black			
		White			
	Auto Shutdown			0	0~120 (one step: 5 mins)
	Sleep Timer			0	0~990 (one step: 10 mins)
	Lens Function	Focus	Command		Focus in - motor go step
					Focus in - motor run
					Focus out - motor go step
					Focus out - motor run
		Zoom	Command		Zoom in - motor go step
					Zoom in - motor run
					Zoom out - motor go step
					Zoom out - motor run
		Lens Shift	Command		Left shift up - motor go step
					Left shift up - motor run
					Left shift down - motor go step
					Left shift down - motor run
					Left shift right - motor go step
					Left shift right - motor run
					Left shift left - motor go step
					Left shift left - motor run
		Lens Lock	On	On	
			Off		
		Lens Calibration	Command		
	High Altitude	Off		Off	
		On			
	PIN	PIN Protect	Off	Off	
			On		
		Change PIN			

Main Menu Tree 1st level	2nd level	3rd level	4th level	Default Value	Range
Options	Remote Settings	Top	Off	On	
			On		
		Front	Off	On	
			On		
		HDBaseT	Off	Off	
			On		
		Projector Address	0 ~ 9	0	
	Show Message	Off		Off	
		On			
	LED Settings	Keypad LED	On	On	
			Off		
		Status LED	On	On	
			Off		
			Warnings/ Errors Only		
	Information	Model Name			
		Serial Number			
		Native Resolution			
		MCU FW			
		DDP FW			
		M9813 FW			
		Motor FW			
		ext flash FW			
		Main Input			
		Main Signal Format			
		Main Pixel Clock			
		Main Sync Type			
		Main Horz Refresh			
		Main Vert Refresh			
		PIP/PBP Input			
		PIP/PBP Signal Format			
		PIP/PBP Pixel Clock			
		PIP/PBP Sync Type			
		PIP/PBP Horz Refresh			
		PIP/PBP Vert Refresh			
		Light Source Power			
		Total Projector Hours			
		Light Source Hours			
		Standby Mode			
		Lens Lock Settings			
		IP Address			
		DHCP			
		System Temperature			

MainMenuTree 1st level	2nd level	3rd level	4th level	Default Value	Range
3D	3D	On		Auto	
		Auto			
	3D Invert	On		Off	
		Off			
	3D Format	Frame Packing		Depend on input signal, if a HDMI source with AVINFO data existed then display 3D mode automatically.	
		Side-by-Side (Half)			
		Top and Bottom			
		Frame Sequential			
	1080p@24	96Hz		144Hz	
		144Hz			
	3D Sync Out	To Emitter		To Emitter	
		To Next Projector			
	Frame Delay				1~200
	L/R Reference	1st Frame		1st Frame	
		Field GPIO			
	DLP Link	On		<mark>Off</mark>	
		Off			
Communications	LAN	DHCP		By set	
		IP Address			
		Subnet Mask			
		Default Gateway			
		MAC Address			
		Apply	Command		
	Network	Projector Name		By set	
		Show Network Messages	On		
			Off		
		Restart Network	Command		
		Network Factory Reset	Command		
	Serial Port Baud Rate	1200		19200	
		2400			
		4800			
		9600			
		14400			
		19200			
		38400			
		57600			
		115200			
	Serial Port Echo	Off/On		Off	
	Serial Port Path	RS232		RS232	
		HDBaseT			

Picture Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Picture** and press the **Enter** button to enter the **Picture** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

Picture	
Display Mode	Presentation
Wall Color	White
Brightness	50
Contrast	50
Sharpness	5
Color	50
Tint	50
Gamma	Video
White Peaking	50
Color Temperature	Bright
Color Wheel Speed	3x
HSG Adjustment	➡
Contrast Enhancement	Off
Color Space	Auto
Save to User	➡

Select ⬍   Enter ►   Exit Menu
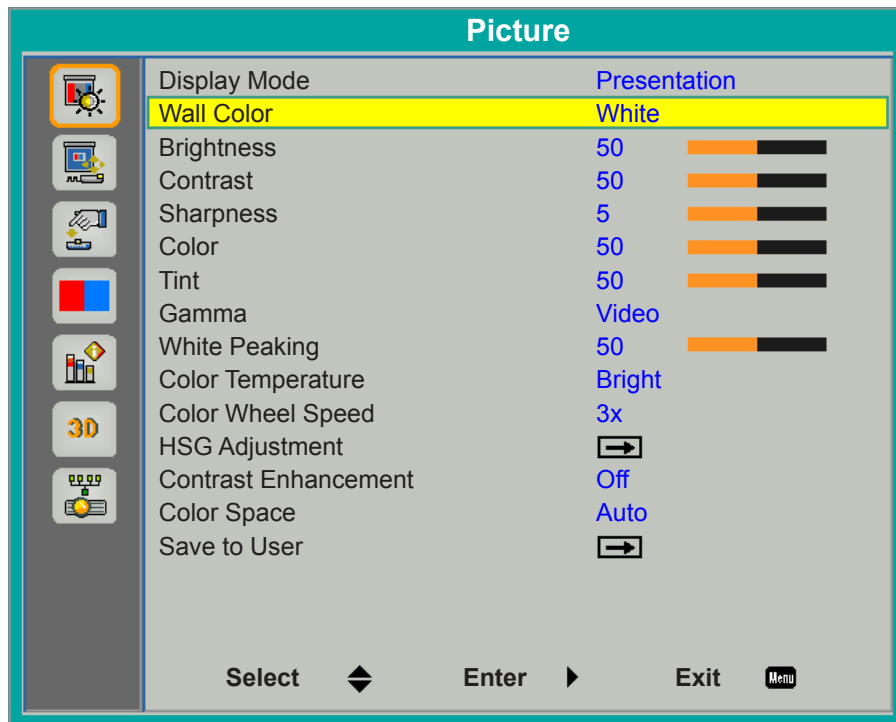
Item	Description
Display Mode	Optimize the projector for displaying images under certain conditions, such as Bright, Presentation, Movie, sRGB, Blending, DICOM SIM., and User.
Wall Color	Set the wall color so that the projector can enhance the color performance customized for the specific wall.
Brightness	Adjust the intensity of the image.
Contrast	Adjust the degree of difference between the lightest and darkest parts of the picture and change the amount of black and white in the image.
Sharpness	Select the edge clarity of the image.
Color	Adjust a video image from black and white to fully saturated color. The color setting applies to video sources only.
Tint	Adjust the red-green color balance in the image of video images. The tint setting applies to video sources only.
Gamma	Select the appropriate gamma from Video, Film, Bright, CRT, and DICOM.
White Peaking	(Video source only) Increase the brightness of whites that are near 100%.
Color Temperature	Change the intensity of the colors.
Color Wheel Speed	Higher speed will reduce the appearance of color artifacts seen by some people.
HSG Adjustment	Configure the color management settings. See "HSG Adjustment Menu" on page 31.

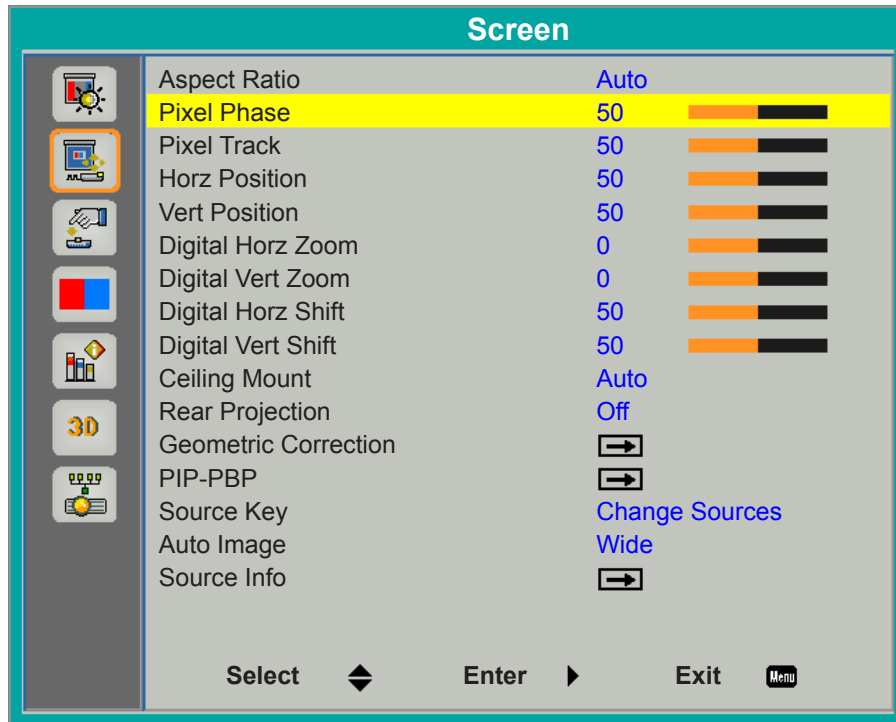| Item	Description
Contrast Enhancement	Enable or disable the contrast enhancement function. Enable this function to raise the contrast ratio. • Off: Disable the contrast enhancement function. • Dynamic Black: Automatically adjust the contrast ratio for video contents. • Extreme Black: Reduce the black level for dark images to raise the contrast ratio.
Color Space	Select a color space that has been specifically tuned for the input signal. Use only for analog signals and certain digital sources.
Save to User	Save the user settings.

HSG Adjustment Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Picture** and press the **Enter** button to enter the **Picture** menu. Press the arrow keys (▲▼) to select **HSG Adjustment** and press the **Enter** button to enter the **HSG Adjustment** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Enter** button to confirm.

HSG Adjustment	
◄ Red ►	
Hue	0
Saturation	50
Gain	15
Reset to Default	➡
Select ▲▼ Adjust ◄► Exit Menu	
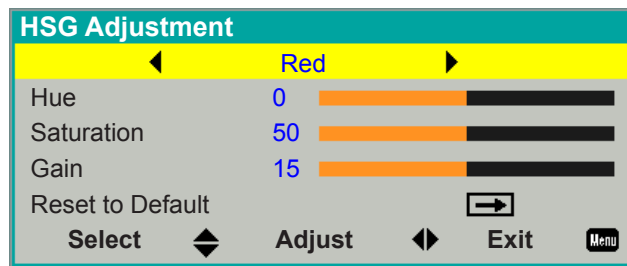
Item	Description
Red Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the red channel of the image.
Green Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the green channel of the image.
Blue Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the blue channel of the image.
Cyan Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the cyan channel of the image.
Magenta Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the magenta channel of the image.
Yellow Hue / Saturation / Gain	Adjust the hue, saturation, and gain of the yellow channel of the image.
White Gain Red / Green / Blue	Adjust the white balance of the red, green, or blue channel of the image.
Reset to Default	Reset the hue, saturation, gain, and white balance adjustments to the factory defaults.

Screen Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Screen** and press the **Enter** button to enter the **Screen** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

Screen		
Aspect Ratio	Auto	
Pixel Phase	50	
Pixel Track	50	
Horz Position	50	
Vert Position	50	
Digital Horz Zoom	0	
Digital Vert Zoom	0	
Digital Horz Shift	50	
Digital Vert Shift	50	
Ceiling Mount	Auto	
Rear Projection	Off	
Geometric Correction	⟶	
PIP-PBP	⟶	
Source Key	Change Sources	
Auto Image	Wide	
Source Info	⟶	
Select ⬍	Enter ►	Exit 🅼🅴🅽🆄

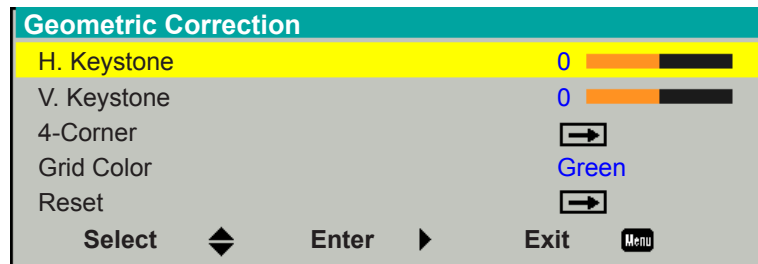| Item	Description
Aspect Ratio	Display an image with the detected size, or resize the image by maximizing either the height, width or both, or resize to the maximum size possible while keeping the original aspect ratio.
Pixel Phase	Analog signals only. Adjust pixel phase when the image still shows shimmer or noise after pixel tracking is optimized. Pixel phase can adjust the phase of the pixel-sampling clock relative to the incoming signal.
Pixel Track	Analog signals only. Steady flickering or several soft vertical stripes or bands across the entire image indicates poor frequency. Proper frequency ensures that the image quality is consistent across the screen, the aspect ratio is maintained, and that the pixel phase can be optimized.
Horz Position	Move the image right or left within the area of available pixels.
Vert Position	Move the image up or down within the area of available pixels.
Digital Horz Zoom	Change the size of projector's display area horizontally. If the display area has been resized by this setting, it can be moved by changing the Digital Horz Shift and Digital Vert Shift settings.
Digital Vert Zoom	Change the size of projector's display area vertically. If the display area has been resized by this setting, it can be moved by changing the Digital Horz Shift and Digital Vert Shift settings.
Digital Horz Shift	Move the display area horizontally if its size has been changed by the Digital Zoom setting.

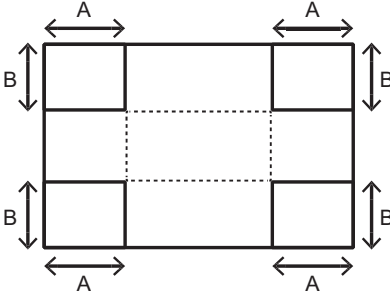| Item	Description
Digital Vert Shift	Move the display area vertically if its size has been changed by the Digital Zoom setting.
Ceiling Mount	Turn the image upside down for ceiling-mounted projection.
Rear Projection	Reverse the image so you can project from behind a translucent screen.
Geometric Correction	Configure the geometric correction settings. See "Geometric Correction Menu" on page 34.
PIP-PBP	Configure the PIP/PBP settings. See "PIP-PBP Settings Menu" on page 35.
Source Key	List or change the sources.
Auto Image	Force the projector to reacquire and lock to the input signal. This is useful when signal quality is marginal.
Source Info	Display the current source settings.
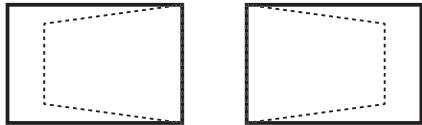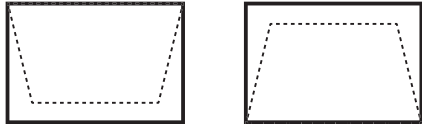
Note:

- *When 16:9 Aspect Ratio is selected, the resolution of the input signal or 1600x1200 will automatically be switched to 1600x900.*
- *If Auto is selected and input signal is 16:9, screen type will auto become (1920x1200).*
- *If Native is selected, the screen will automatically become 1:1 mapping centered.*

Geometric Correction Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Screen** and press the **Enter** button to enter the **Screen** menu. Press the arrow keys (▲▼) to select **Geometric Correction** and press the **Enter** button to enter the **Geometric Correction** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

Geometric Correction	
H. Keystone	0
V. Keystone	0
4-Corner	→
Grid Color	Green
Reset	→
Select ▲▼ **Enter** ► **Exit** Menu	

Item	Description
H. Keystone	Adjust the keystone horizontally and make a squarer image. Horizontal keystone is used to correct a keystoned image shape in which the left and right borders of the image are unequal in length. This is intended for use with horizontally on-axis applications.
V. Keystone	Adjust the keystone vertically and make a squarer image. Vertical keystone is used to correct a keystoned image shape in which the top and bottom are slanted to one of the sides. This is intended when for use with vertically on-axis applications.
4-Corner	Allow the image to be squeezed to fit an area defined by moving each of the four corners' x and y position.
Grid Color	Choose the color of 4 corner, green or purple.
Reset	Restore the settings to its default value.

PIP-PBP Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Screen** and press the **Enter** button to enter the **Screen** menu. Press the arrow keys (▲▼) to select **PIP-PBP** and press the **Enter** button to enter the **PIP-PBP** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.
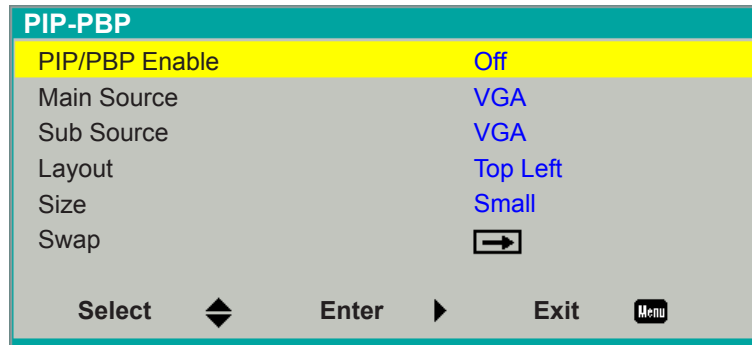
Item	Description
PIP/PBP Enable	Toggle between displaying two sources at once (Main and PIP/PBP images) or one source only.
Main Source	From the list of active inputs, select one to be used as the main image.
Sub Source	From the list of active inputs, select one to be used as the PIP/PBP.
Layout	Set the location of the PIP image on the screen.
Size	Select the PIP size. Available options: Small, Medium, or Large.
Swap	Change the main image to PIP/PBP, and the PIP/PBP to main image. Swapping is available only when PIP/PBP is enabled.

PIP/PBP layout and size table as described below.

➢ P : indicates primary source region (lighter color).

➢ * : Both source regions are the same size.

PIP Layout	PIP Size		
	Small	**Medium**	**Large**
PIP-Bottom Right	P	P	P
PIP-Bottom Left	P	P	P
PIP-Top Left	P	P	P
PIP-Top Right	P	P	P

PBP Layout	PBP Size		
	Small	**Medium**	**Large**
PBP, Main Left	-	-	P *
PBP, Main Right	-	-	P *

PIP/PBP Matrix	HDBaseT	HDMI-1	DVI-D	HDMI-2	VGA
HDBaseT	—	—	—	V	V
HDMI-1	—	—	—	V	V
DVI-D	—	—	—	V	V
HDMI-2	V	V	V	—	V
VGA	V	V	V	V	—

Settings Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Settings** and press the **Enter** button to enter the **Settings** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

	Settings	
	Language	English
	Menu Location	▣
	Standby Power Mode	Communication mode
	Test Pattern	Checkerboard
	Direct Power On	Off
	Hot-Key Settings	Blank Screen
	Reset to Default	➡
	Service	➡
	Select ⬍ Enter ► Exit Menu	
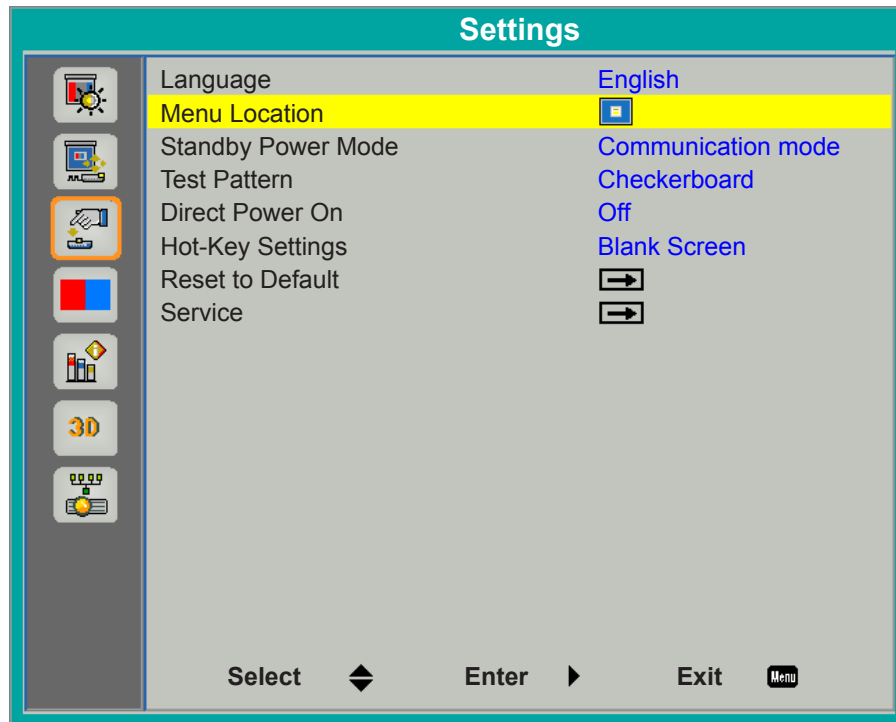
Item	Description
Language	This item allows you to select an available language for the OSD display.
Menu Location	Set up the on-screen display menu location.
Standby Power Mode	Set the standby power mode. • 0.5W mode: The projector is in standby mode when connected to AC power. (<0.5W) • Communication mode: The projector could be controlled via the LAN terminal during power standby.
Test Pattern	Choose the desired internal test pattern to display or press the **Pattern** button on the remote control to select internal test pattern.
Direct Power On	The projector automatically turns on when electrical power is connected.
Hot-Key Settings	Assign a different function to the hot-key on the remote control by highlighting the function in the list. Choose a function that does not already have a dedicated button, and assign the hot-key to that function, allowing you to quickly and easily use the chosen function.
Reset to Default	Restore all settings to their default value. It will not reset network. **WARNING:** After resetting, lens calibration is necessary.
Service	For service only.

Light Source Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Light Source** and press the **Enter** button to enter the **Light Source** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.
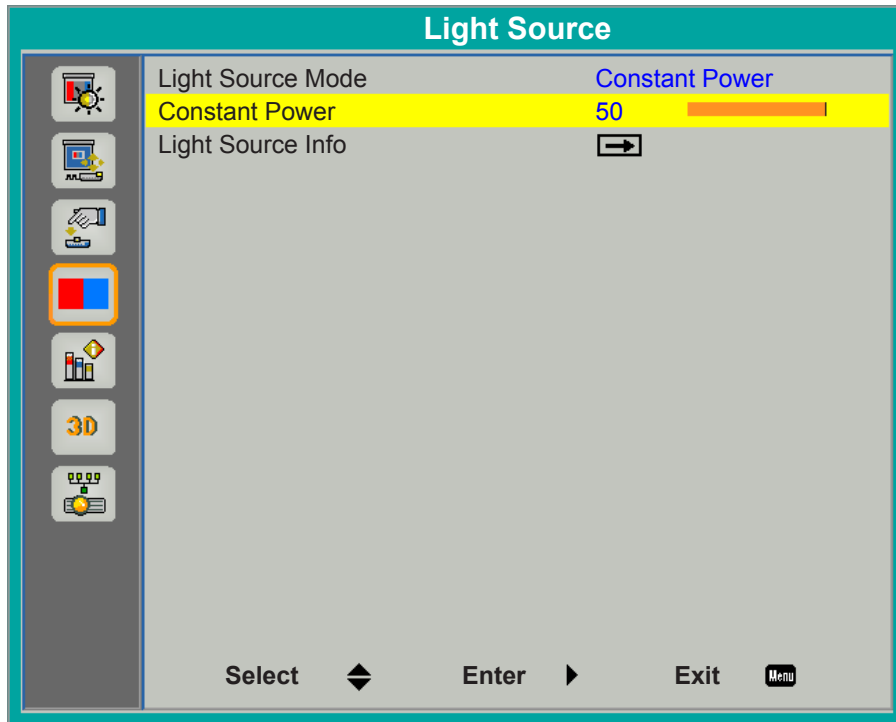
Light Source		
Light Source Mode	Constant Power	
Constant Power	50	
Light Source Info		

Select ◆ Enter ▶ Exit Menu

Item	Description
Light Source Mode	Set the light source mode.
Constant Power	Set the value of the laser diode power.
Light Source Info	Display the total hours of the projector, the total hours of the laser diode that have been used and information on light sensor calibration.

Options Menu
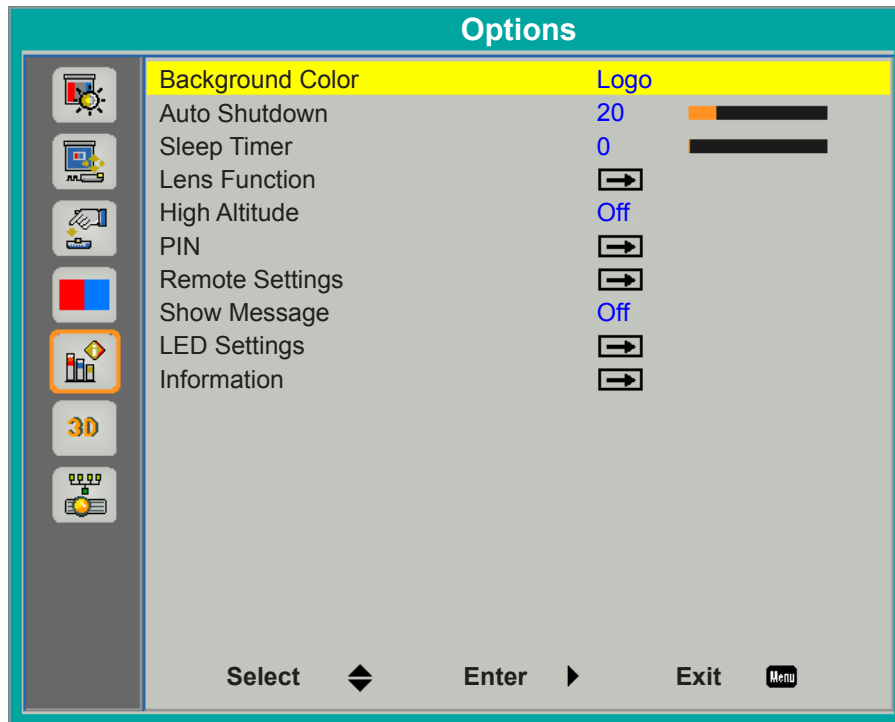
Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Options** and press the **Enter** button to enter the **Options** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.
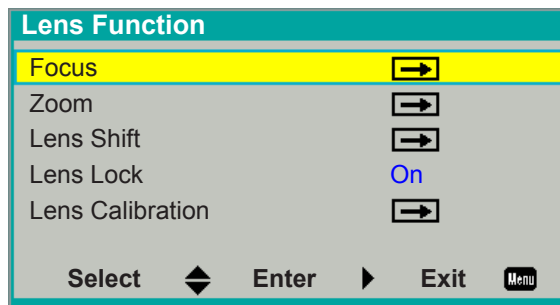
	Options	
	Background Color	Logo
	Auto Shutdown	20
	Sleep Timer	0
	Lens Function	→
	High Altitude	Off
	PIN	→
	Remote Settings	→
	Show Message	Off
	LED Settings	→
	Information	→
	Select ⬍ Enter ▶ Exit [Menu]	

Item	Description
Background Color	Use this feature to display a "Logo", "Blue", "Black" or "White" screen when no signal is available.
Auto Shutdown	Automatically turns the projector off after no signals are detected for a preset number of minutes. If an active signal is received before the projector powers down, the image will be displayed.
Sleep Timer	This item allows the projector to automatically power off after it has been on for a specified amount of time.
Lens Function	Configure the lens settings. See "Lens Settings Menu" on page 40.
High Altitude	Set high altitude mode On/Off. When On, the fan will operate at high speed to ensure sufficient air flow for high altitudes.
PIN	Configure the PIN settings. See "PIN Protect Menu" on page 41.
Remote Settings	Configure the remote settings. • Top (Off/On) • Front (Off/On) • HDBaseT (Off/On) • Projector Address (0 ~ 9). **Note:** • *If the remote control does not work, try to switch <u>HDBaseT of Remote Settings to on/off</u> in accordance with the external device.*

Item	Description
Show Message	Hide or display projector settings.
LED Settings	Control the keypad LED and status LED.
Information	Display the projector settings.

Lens Function Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Options** and press the **Enter** button to enter the **Options** menu. Press the arrow keys (▲▼) to select **Lens Function** and press the **Enter** button to enter the **Lens Function** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

```
┌──────────────────────────────────────┐
│ Lens Function                        │
├──────────────────────────────────────┤
│ Focus                      ➡          │
│ Zoom                       ➡          │
│ Lens Shift                 ➡          │
│ Lens Lock                  On         │
│ Lens Calibration           ➡          │
│                                       │
│   Select   ▲▼   Enter  ▶  Exit  Menu │
└──────────────────────────────────────┘
```

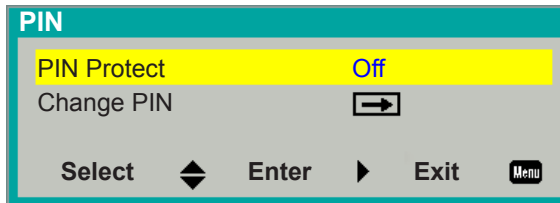| Item	Description
Focus	Adjust focus function on the projected image.
Zoom	Adjust zoom function on the projected image.
Lens Shift	Shift the projected image.
Lens Lock	Select this function to prevent all lens motors from moving. • On: Lens shift will be locked. • Off: Lens shift can be used by user.
Lens Calibration	Perform calibration and return lens to the center position.

PIN Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Options** and press the **Enter** button to enter the **Options** menu. Press the arrow keys (▲▼) to select **PIN** and press the **Enter** button to enter the **PIN** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

PIN	
PIN Protect	Off
Change PIN	→
Select ▲▼ **Enter** ► **Exit** Menu	

Item	Description
PIN Protect	Protect your projector with a password. Once enabled, you must enter the password before you can project an image.
Change PIN	Change the password.

Note:
* *Default PIN code is "1,2,3,4,5".*

3D Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **3D** and press the **Enter** button to enter the **3D** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.
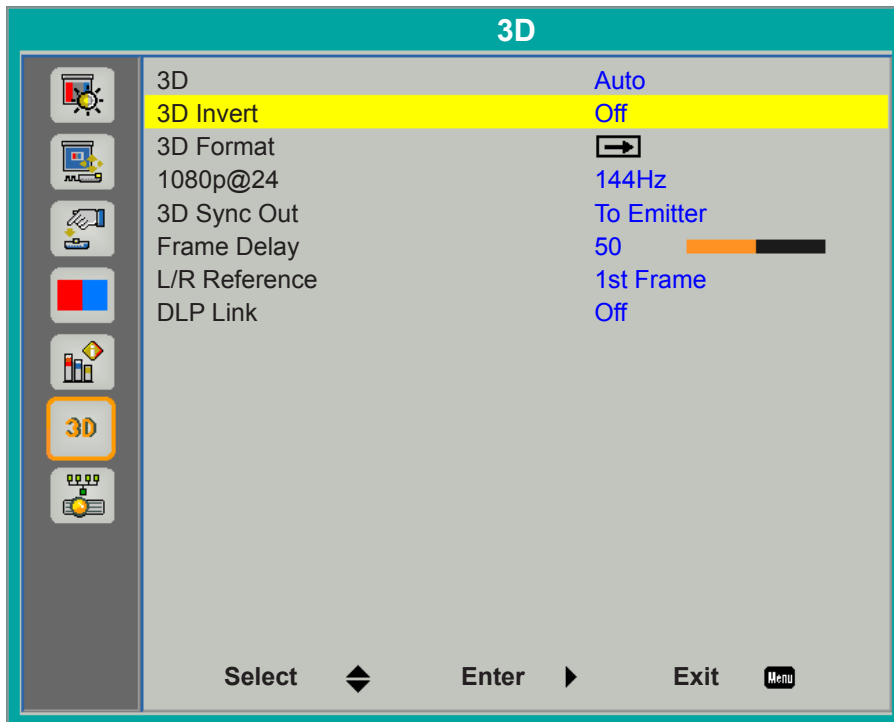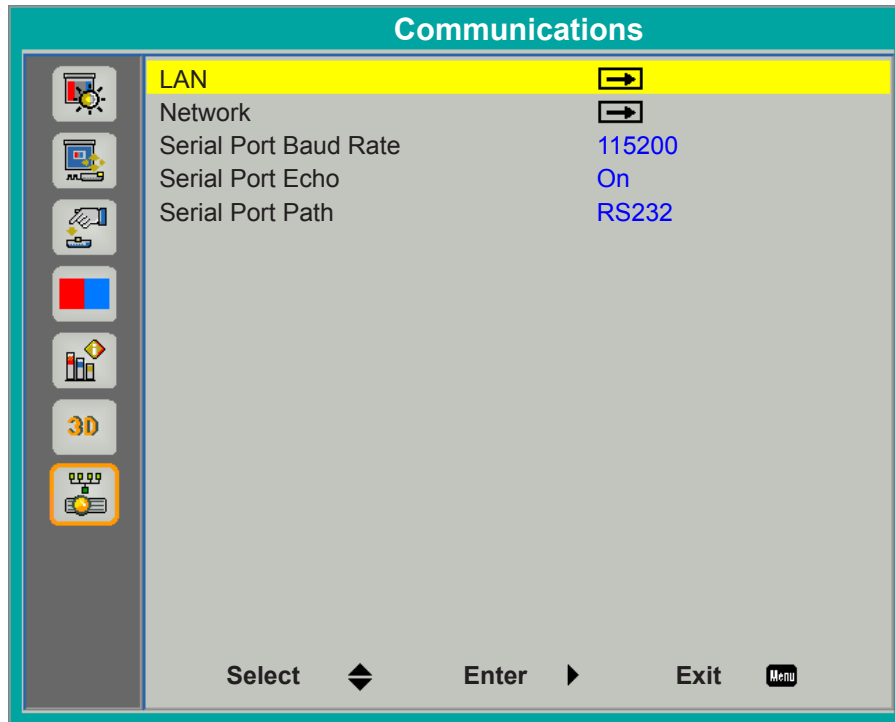
3D	
3D	Auto
3D Invert	Off
3D Format	➡
1080p@24	144Hz
3D Sync Out	To Emitter
Frame Delay	50
L/R Reference	1st Frame
DLP Link	Off

Select ⬍   Enter ▶   Exit Menu

| Item	Description
3D	Enable 3D content detection.
3D Invert	Invert 3D sync signal for the application of using single projector.
3D Format	Set the 3D format. Supports mandatory 3D formats and frame sequential 3D@120Hz.
1080p@24	Set the 3D resolution 1080p@24 sequency.
3D Sync Out	Transmit a 3D sync signal by the 3D sync output corrector to the emitter or to the next projector for 3D blending purposes.
Frame Delay	Correct asynchronous displaying of images under 3D blending.
L/R Reference	Source of the left or right reference. • 1st Frame: This is used for single 3D projector. • Field GPIO: Select **Field GPIO** to make the first 3D output signal the same for multi-projectors application.
DLP Link	Select 3D Sync source: • On: 3D Sync type is DLP link. • Off: 3D Sync source is from the **3D Sync OUT** port.

Communications Menu

Press the **Menu** button to open the OSD menu. Press the arrow keys (▲▼) to select **Communications** and press the **Enter** button to enter the **Communications** menu. Press the arrow keys (▲▼) to select the menu option and press the **Enter** button to enter its submenu. Press the arrow keys (▲▼◄►) to select or adjust the desired settings and press the **Menu** button to exit.

Communications	
LAN	➡
Network	➡
Serial Port Baud Rate	115200
Serial Port Echo	On
Serial Port Path	RS232

Select ⬍   Enter ►   Exit Menu

Item	Description
LAN	Configure the local area network (LAN) settings. • DHCP: Turn the DHCP ON/OFF. • IP Address: Assign Network IP Address. • Subnet Mask: Assign Network Subnet Mask. • Default Gateway: Assign Network Default Gateway. • MAC Address: Display the network MAC Address value. • Apply: Apply Network settings.
Network	Configure the general network settings. • Projector Name: Display the projector hostname for Network. • Show Network Messages: Turn network messages on or off. • Restart Network: Restart the network. • Network Factory Reset: Perform factory reset on the network settings. The Projector Name and network configuration settings will be reset.
Serial Port Baud Rate	Select the serial port its baud rate.
Serial Port Echo	Control whether the serial port echoes characters.
Serial Port Path	Select the serial port path from either RS232 or HDBaseT.

Control Your Projector Using Web Browser
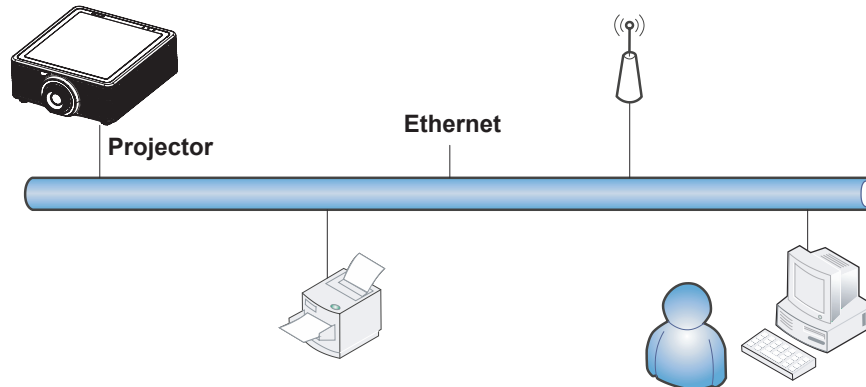
Wired LAN Terminal Functionalities

Remote control and monitoring of a projector from a PC (or Laptop) via wired LAN is also possible.

Compatibility with Crestron control boxes enables not only collective projector management on a network but also management from a control panel on a PC (or Laptop) browser screen.

- • Crestron is a registered trademark of Crestron Electronics, Inc. of the United States.

Supported External Devices

This projector is supported by the specified commands of the Crestron Electronics controller and related software (ex, RoomView®).

  http://www.crestron.com/

The projector supports AMX and PJ-Link as well.

  http://www.amx.com/
  http://pjlink.jbmia.or.jp/

For more detail of information about the diverse types of external devices which can be connected to the Ethernet port and remote/control the projector, as well as the related control commands supporting for each external device, kindly please get contact with the Support-Service team directly.

LAN_RJ45

1. Connect an RJ45 cable to Ethernet port on the projector and the PC (Laptop).
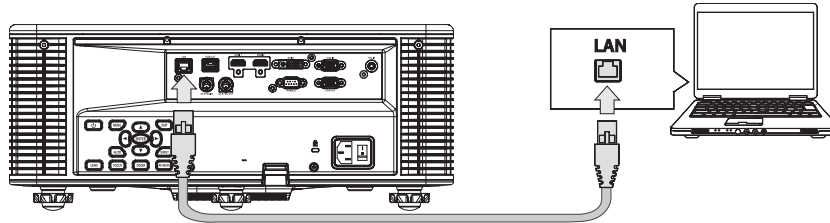
2. On the PC (Laptop), select **Start** → **Control Panel** → **Network and Internet**.
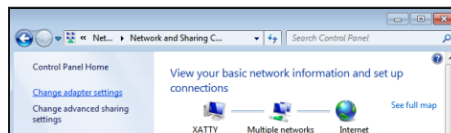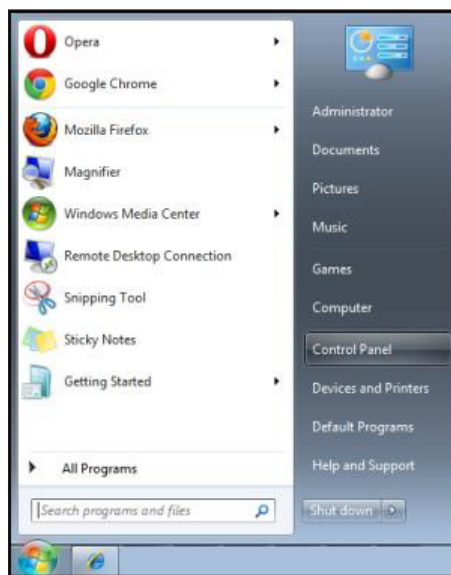
3. Right-click on **Local Area Connection**, and select **Properties**.
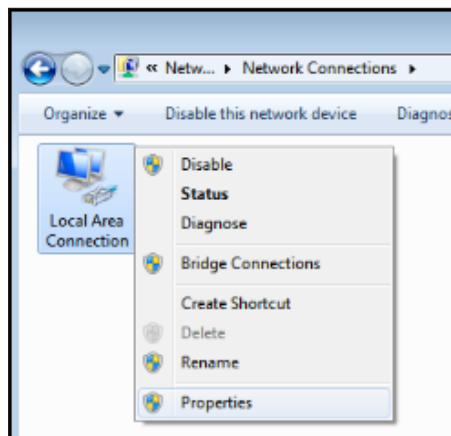
4. In the **Properties** window, select the **Networking** tab, and select **Internet Protocol Version 4 (TCP/IPv4)**.

5. Click **Properties**.
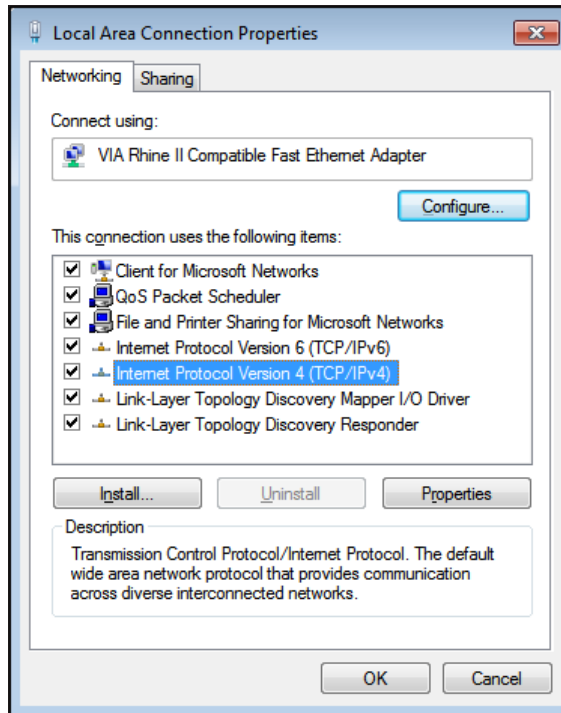
6. Click **Use the following IP address** and fill in the IP address and Subnet mask, then click **OK**.
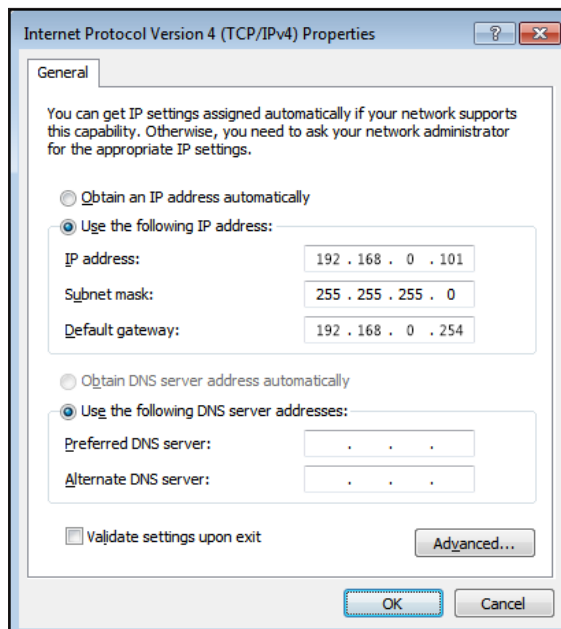
7. Press the **Menu** button on the projector.

8. Select **Communications → LAN**.

9. After getting into **LAN**, input the following (Default setting):

- DHCP: Off
- IP Address: 192.168.0.100
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.0.254

10. Select **Apply** to confirm the settings, and then wait until finished.

11. Open a web browser (for example, Microsoft Internet Explorer with Adobe Flash Player 9.0 or higher).
In the Address bar, input the IP address: 10.10.10.10.
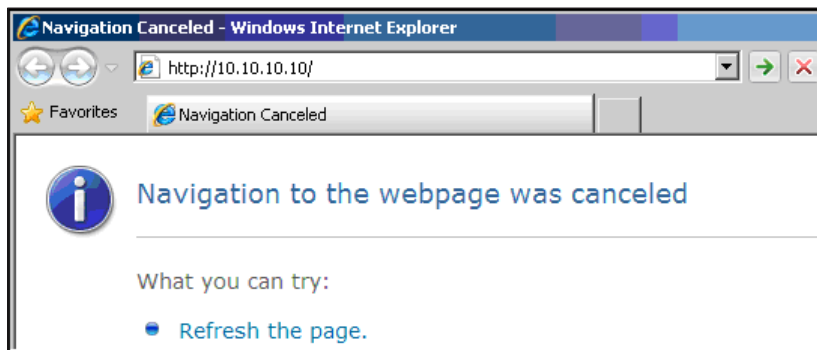
12. Press the **Enter** / ► button.

The projector is setup for remote management. The LAN/RJ45 function displays as follows.

Main page
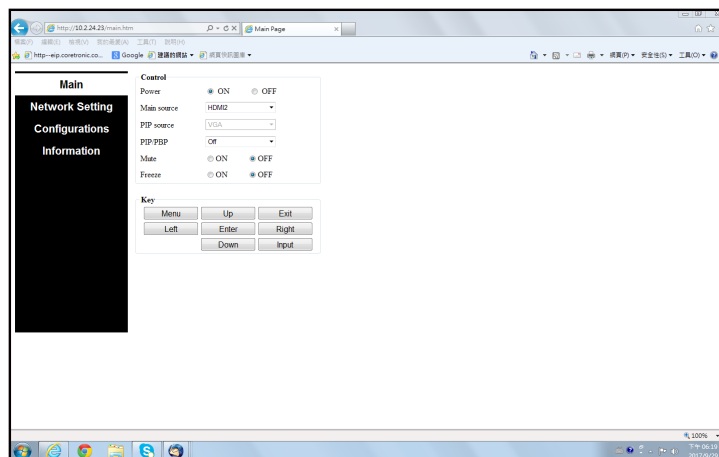
Network Setting page
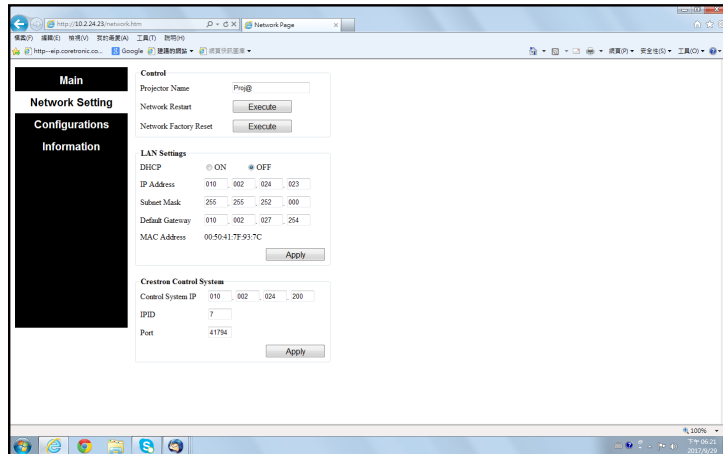
Configurations page
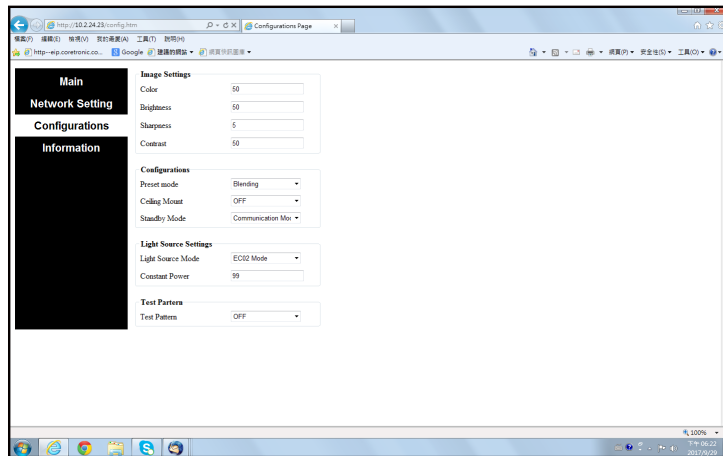
Information page
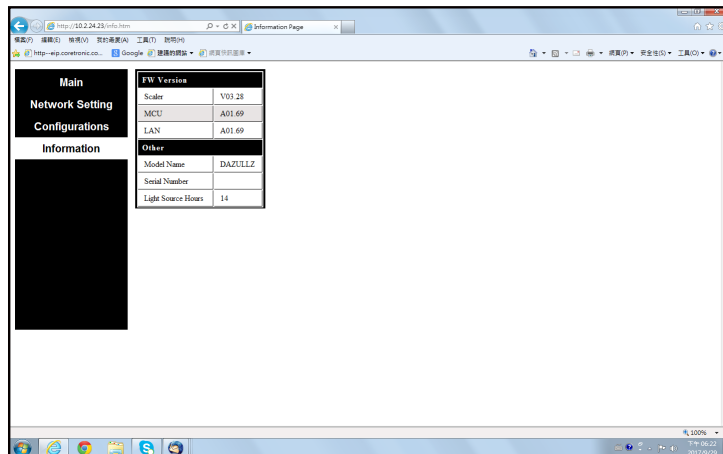
RS232 by Telnet Function

Besides projector connected to RS232 interface with "Hyper-Terminal" communication by dedicated RS232 command control, there is alternative RS232 command control way, so called "RS232 by TELNET" for LAN/RJ45 interface.

Quick Start-Guide for "RS232 by TELNET"

Check and get the IP-Address on OSD of the projector.

Make sure that laptop/PC can access the web-page of the projector.

Make sure that "Windows Firewall" setting to be disabled in case of "TELNET" function filtering out by laptop/PC.
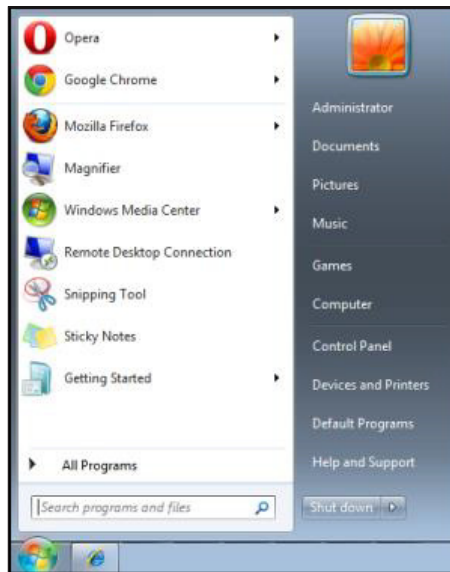
Start → All Programs → Accessories → Command Prompt
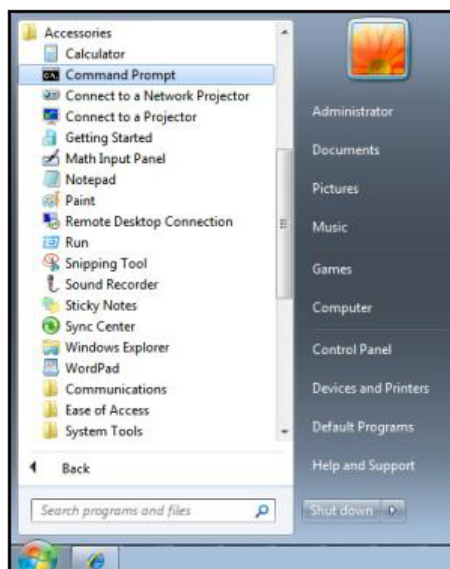
Input the command format like the below:

telnet ttt.xxx.yyy.zzz 3023 (the **Enter** button is pressed)

(**ttt.xxx.yyy.zzz**: IP-Address of the projector)

If Telnet-Connection ready, and user can have RS232 command input, then press the **Enter** button, the RS232 command will be workable.

How to have TELNET enabled in Windows VISTA / 7

By default installation for Windows VISTA, "TELNET" function is not included. But end-user can have it by way of "Turn Windows features On or Off" to be enabled.

1. Open "Control Panel" in Windows VISTA.
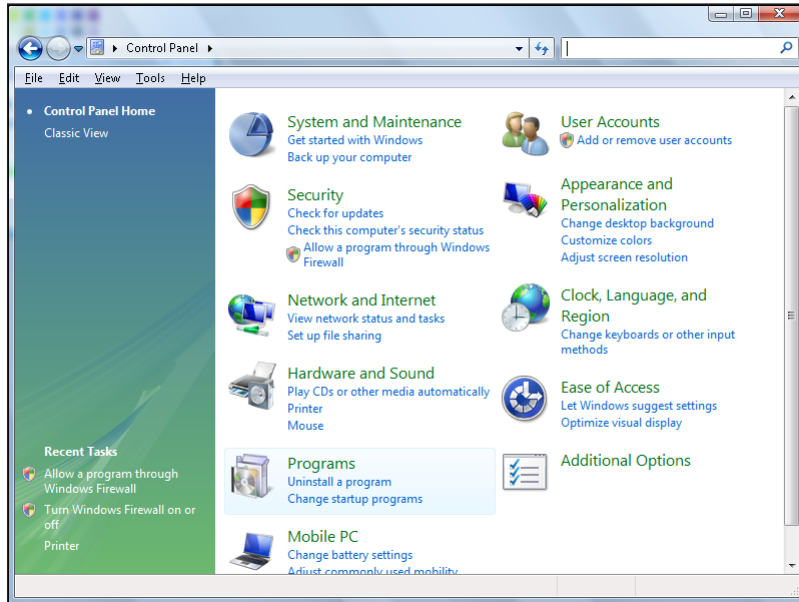
2. Open "Programs".
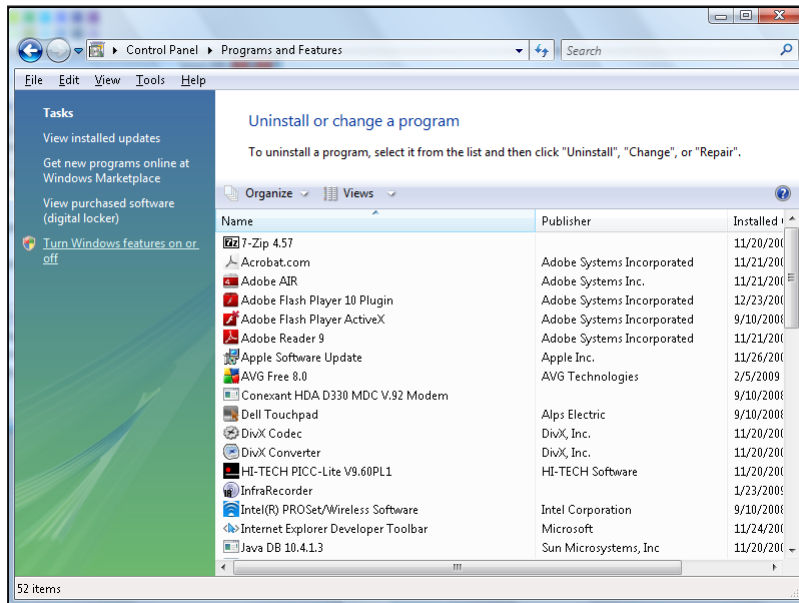
3. Select "Turn Windows features on or off" to open.
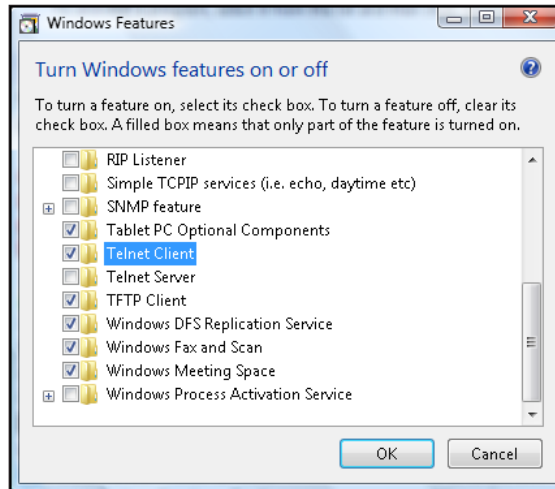
4. Have "Telnet Client" option checked, then click **OK**.
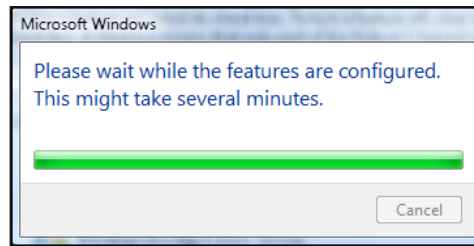
Specsheet for "RS232 by TELNET":

1. Telnet: TCP

2. Telnet port: 3023

(for more detail, kindly please get contact with the service agent or team)

3. Telnet utility: Windows "TELNET.exe" (console mode)

4. Disconnection for RS232-by-Telnet control normally: Close Windows Telnet utility directly after TELNET connection ready.

5. Limitation 1 for Telnet-Control: there is less than 50 bytes for successive network payload for Telnet-Control application.

Limitation 2 for Telnet-Control: there is less than 31 bytes for one complete RS232 command for Telnet-Control.

Limitation 3 for Telnet-Control: Minimum delay for next RS232 command must be more than 200 (ms).

(*, In Windows built-in "TELNET.exe" utility, pressing the **Enter** button will create a "Carriage-Return" and "New-Line" code.)

Maintenance and Security

Replacing the Projection Lens

Perform the following to replace the projection lens:

1. Center the lens. Use the **Lens H** or **Lens V** button (on the remote control) to adjust the lens at its center position.

> ***Important:***
> • *Ensure that the lens is at or near its center position.*
> • *Attempting to remove the lens when at a large offset may cause damage to the lens assembly.*

2. Press "⏻" on the built-in keypad or press "◉" on the remote control twice to turn off the projector after cooling down.

3. Remove the lens cover from the lens.
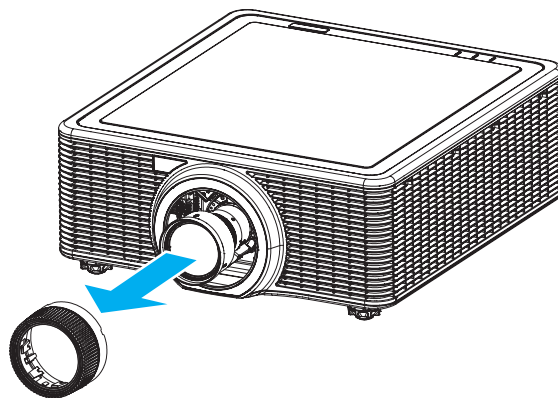
4. Rotate the lens counter-clockwise to disengage it from the lens mount.
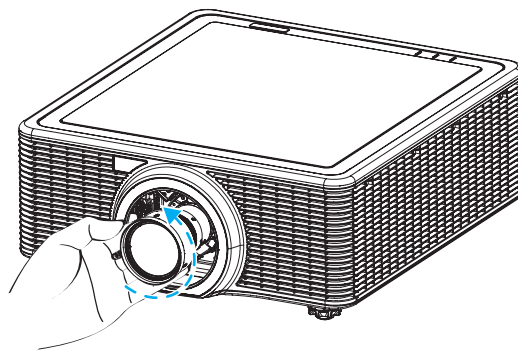
5. Remove the lens out of the lens mount.

6. With the label "TOP" on the lens assembly facing up, install the new lens. See "Installing the Projection Lens" on page 10.

TOP
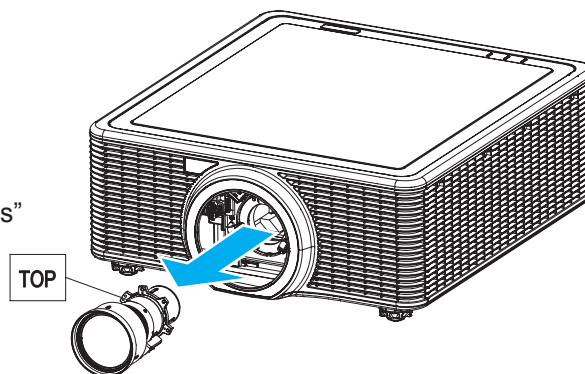
Cleaning the Projector

Cleaning the projector to remove dust and grime will help ensure trouble-free operation.

> ***Warning:***
> * *Be sure to turn off and unplug the projector at least 30 minutes before cleaning. Failure to do so could result in a severe burn.*
> * *Use only a dampened cloth when cleaning. Do not allow water to enter the ventilation openings on the projector.*
> * *If a little water gets into the projector interior while cleaning, leave unplugged in a well-ventilated room for several hours before using.*
> * *If a lot of water gets into the projector interior when cleaning, have the projector serviced.*

Cleaning the Lens

You can purchase Optical lens cleaner from most camera stores. Refer to the following to clean the projector lens.

1. Apply a little Optical lens cleaner to a clean soft cloth. (Do not apply the cleaner directly to the lens.)

2. Lightly wipe the lens in a circular motion.

> ***Caution:***
> * *Do not use abrasive cleaners or solvents.*
> * *To prevent discoloration or fading, avoid getting cleaner on the projector case.*

Cleaning the Case

Refer to the following to clean the projector case.

1. Wipe off dust with a clean dampened cloth.

2. Moisten the cloth with warm water and mild detergent (such as used to wash dishes), and then wipe the case.

3. Rinse all detergent from the cloth and wipe the projector again.

> ***Caution:***
> *To prevent discoloration or fading of the case, do not use abrasive alcohol-based cleaners.*

Using the Kensington® Lock

If you are concerned about security, attach the projector to a permanent object with the Kensington slot and a security cable.
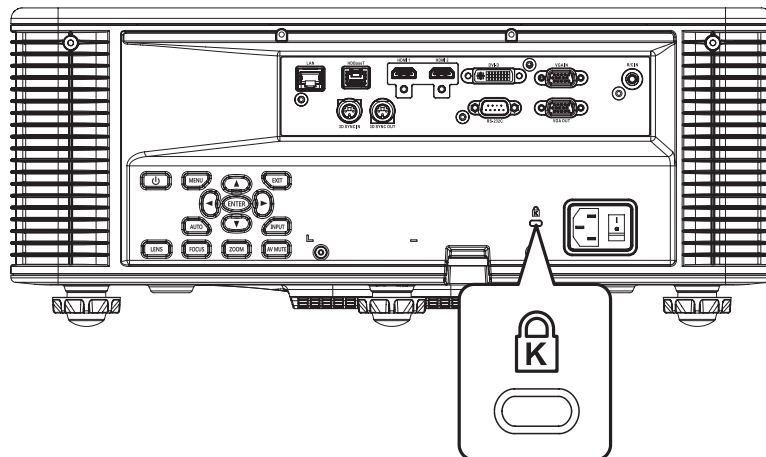
Note:

Contact your vendor for details on purchasing a suitable Kensington security cable.

The security lock corresponds to Kensington's MicroSaver Security System. If you have any comment, contact: Kensington, 2853 Campus Drive, San Mateo, CA 94403, U.S.A. Tel: 800-535-4242,
http://www.Kensington.com.

Troubleshooting

Common Problems and Solutions

These guidelines provide tips to deal with problems you may encounter while using the projector. If the problem remains unsolved, contact your dealer for assistance.

Often after time spent troubleshooting, the problem is traced to something as simple as a loose connection. Check the following before proceeding to the problem-specific solutions.

➢ Use some other electrical device to confirm that the electrical outlet is working.

➢ Ensure the projector is turned on.

➢ Ensure all connections are securely attached.

➢ Ensure the attached device is turned on.

➢ Ensure a connected PC is not in suspending mode.

➢ Ensure a connected notebook computer is configured for an external display.
(This is usually done by pressing an Fn-key combination on the notebook.)

Tips for Troubleshooting

• In each problem-specific section, try the steps in the order suggested. This may help you to solve the problem more quickly.

• Try to pin point the problem and thus avoid replacing non-defective parts. For example, if you replace batteries and the problem remains, put the original batteries back and go to the next step.

• Keep a record of the steps you take when troubleshooting: The information may be useful when calling for technical support or for passing on to service personnel.

LED Error Messages

The LED status indicators are located on the top of the projector. Each LED is defined below.

Message	Light LED			Status LED			AV Mute LED	
	Green	Orange	Red	Green	Orange	Red	Green	Orange
Standby State	-	-	-	Flashing	-	-	-	-
Power on (Warm up)	-	-	-	-	Flashing	-	-	-
Power on & Laser diode on	Steady	-	-	Steady	-	-	Steady	-
Power off (Cooling down)	-	-	-	-	Flashing	-	-	-
AV mute is off (Image is displayed)	Steady	-	-	Steady	-	-	Steady	-
AV mute is on (Image is black)	Steady	-	-	Steady	-	-	-	Steady
Projector communication	Steady	-	-	Flashing	-	-	Steady	-
Error (Over temperature)	-	-	-	-	-	Steady	-	-
Error (Fan failure)	-	-	-	-	-	Flashing	-	-

Image Problems

Problem: No image appears on the screen

1. Verify the settings on your notebook or desktop PC.

2. Turn off all equipment and power on again in the correct order.

Problem: The image is blurred

1. Press the **Focus** button to adjust the focus on the projector.

2. Press the **Auto** button on the remote control to automatically optimize image.

3. Ensure the projector-to-screen distance is within the specified range.

4. Check that the projector lens is clean.

Problem: The image is wider at the top or bottom (trapezoid effect)

1. Position the projector so it is as perpendicular to the screen as possible.

2. Press the **Keystone H** or **Keystone V** button on the remote control to correct the problem.

Problem: The image is reversed

Check the **Rear Projection** on the **Screen** menu of the OSD.

Problem: The image is streaked

1. Set the **Pixel Phase** and **Pixel Track** settings on the **Screen** menu of the OSD to the default settings.

2. Ensure the problem is not caused by a connected PC's video card, connect to another computer.

Problem: The image is flat with no contrast

Adjust the **Contrast** setting on the **Picture** menu of the OSD.

Problem: The color of the projected image does not match the source image

Adjust the **Color Temperature** and **Gamma** settings on the **Picture** menu of the OSD.

Laser Diode Problems

Problem: There is no light from the projector

1. Check that the power cable is securely connected.

2. Ensure the power source is good by testing with another electrical device.

3. Restart the projector in the correct order and check that the Light LED is in green.

Problem: The laser diode goes off

1. Power surges can cause the laser diode to turn off. Re-plug power cord. If the Light LED is in orange, this indicates that the laser diode time has expired. Then press "⏻" on the built-in keypad or press "🔴" on the remote control to turn off the projector.

2. Have the projector serviced.

Remote Control Problems

Problem: The projector does not respond to the remote control

1. Direct the remote control towards remote sensor on the projector.

2. Ensure the path between remote and sensor is not obstructed.

3. Turn off any fluorescent lights in the room.

4. Make sure that the batteries are installed with the correct polarity.

5. Replace the batteries.

6. Turn off other Infrared-enabled devices in the vicinity.

7. Have the remote control serviced.

Having the Projector Serviced

If you are unable to solve the problem, you should have the projector serviced. Pack the projector in the original carton. Include a description of the problem and a checklist of the steps you took when trying to fix the problem. The information may be useful to service personnel. For servicing, return the projector to the place you purchased it.

HDMI Q & A

Q. What is the difference between a "Standard" HDMI cable and a "High-Speed" HDMI cable?

Recently, HDMI Licensing, LLC announced that cables would be tested as Standard or High- Speed cables.

• Standard (or "category 1") HDMI cables have been tested to perform at speeds of 75Mhz or up to 2.25Gbps, which is the equivalent of a 720p/1080i signal.

• High Speed (or "category 2") HDMI cables have been tested to perform at speeds of 340Mhz or up to 10.2Gbps, which is the highest bandwidth currently available over an HDMI cable and can successfully handle 1080p signals including those at increased color depths and/or increased refresh rates from the Source. High-Speed cables are also able to accommodate higher resolution displays, such as WQXGA cinema monitors (resolution of 2560 x 1600).

Q. How do I run HDMI cables longer than 10 meters?

There are many HDMI Adopters working on HDMI solutions that extend a cable's effective distance from the typical 10 meter range to much longer lengths. These companies manufacture a variety of solutions that include active cables (active electronics built into cables that boost and extend the cable's signal), repeaters, amplifiers as well as CAT5/6 and fiber solutions.

Q. How can I tell if a cable is an HDMI certified cable?

All HDMI products are required to be certified by the manufacturer as part of the HDMI Compliance Test Specification. However, there may be instances where cables bearing the HDMI logo are available but have not been properly tested. HDMI Licensing, LLC actively investigates these instances to ensure that the HDMI trademark is properly used in the market. We recommend that consumers buy their cables from a reputable source and a company that is trusted.

For more detail information check http://www.hdmi.org/learningcenter/faq.aspx#49.

Specifications

Specifications

Item	Description
Display type	0.67" WUXGA DMD
Resolution	WUXGA (1920 x 1200)
Zoom/focus	Motorized
Zoom ratio	Depend on Lens
Keystone correction	Vertical: +/- 20 degrees, Horizontal: +/- 20 degrees
Projection methods	Front, Rear, Desktop/Ceiling (Rear, Front)
Data compatibility	VGA, SVGA, XGA, WXGA, SXGA, SXGA+, UXGA, WUXGA, Mac
Video compatibility	1080 i/p, 720p, 576 i/p, 480 i/p
H-Sync	15, 31~91.4KHz
V-Sync	24~30Hz, 47~120Hz
Safety Certification	cTUVus, FCC, CE, CB, CCC, KC/KCC
Operation temperature	5° ~ 40°C
Dimensions (W x H x D)	484 x 181 x 509 mm (without lens and elevators)
AC Input	AC 100 – 240 V @ 50/60 Hz
Power Consumption	470W (ECO brightness mode); 650W (Normal brightness mode)
Laser Diode Power	70W@3A (Normal Mode)
Laser Diode Life	20,000 Hours Standard @ 70W (Normal Mode)
Input Terminals	2 x HDMI (version1.4) (with locking screw) 1 x DVI-D (only support digital signal) 1 x VGA IN (D-Sub 15pin) (Computer In) 1 x HDBaseT 1 x 3D SYNC IN
Output Terminals	1 x VGA OUT (Support VGA loops through to monitor) (Monitor Out) 1 x 3D SYNC OUT
Control Terminals	1 x RS232 (D-sub 9 pin) (PC Control) 1 x Wired in (3.5mm phone jack) (Remote In) 1 x RJ45 (LAN)
Security	Kensington lock Security bar

> *Note:*
>
> *For questions regarding product specifications, please contact your local distributor.*

Projection Distance vs. Projection Size
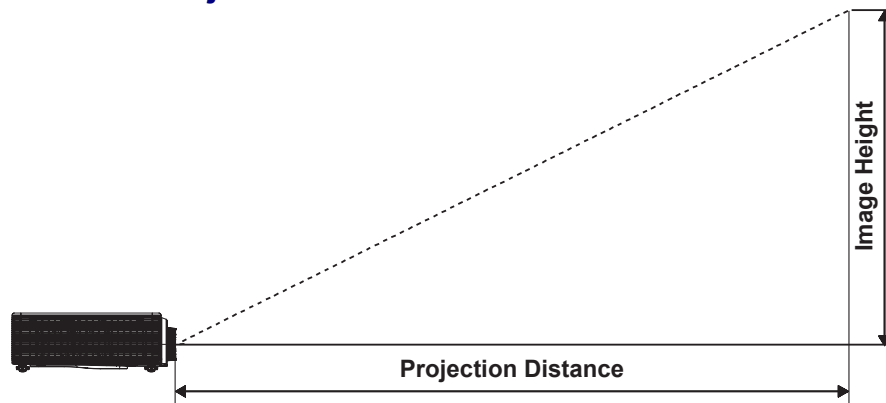
Projection Distance and Size Table

DMD			0.67"													
Projection Lens			A16	A15		A01		A02		A05		A03		A13	
Throw Ratio			0.361 (120")	0.75-0.95		0.95-1.22		1.22-1.53		1.22-1.53		1.52-2.92		2.90-5.50	
Zoom Ratio			NA	1.26X		1.28X		1.25X		1.25X		1.9X		1.9X	
Throw Distance			0.96~2.65m	0.79-6.21m		1.01~7.98m		1.30~9.96m		1.30~9.96m		1.61~19.00m		3.18~34.77m	
Projection Screen Size			Throw distance (m)													
Diagonal (inch)	Height (m)	Width (m)	(m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)	Min (m)	Max (m)
50	0.67	1.08	NA	0.79	1.01	1.01	1.31	1.30	1.63	1.30	1.63	1.61	3.12	3.18	5.89
60	0.81	1.29	NA	0.96	1.22	1.22	1.57	1.57	1.97	1.57	1.97	1.94	3.76	3.78	7.05
70	0.94	1.51	NA	1.12	1.43	1.43	1.84	1.83	2.30	1.83	2.30	2.27	4.39	4.39	8.20
80	1.08	1.72	NA	1.28	1.64	1.63	2.11	2.10	2.63	2.10	2.63	2.60	5.03	5.00	9.36
90	1.21	1.94	NA	1.45	1.85	1.84	2.38	2.36	2.97	2.36	2.97	2.94	5.66	5.61	10.51
100	1.35	2.15	NA	1.61	2.05	2.05	2.64	2.63	3.30	2.63	3.30	3.27	6.30	6.21	11.67
110	1.48	2.37	NA	1.78	2.26	2.26	2.91	2.90	3.63	2.90	3.63	3.60	6.93	6.82	12.82
120	1.62	2.58	0.96	1.94	2.47	2.47	3.18	3.16	3.97	3.16	3.97	3.94	7.57	7.43	13.98
130	1.75	2.80	1.04	2.10	2.68	2.67	3.44	3.43	4.30	3.43	4.30	4.27	8.20	8.04	15.13
140	1.88	3.02	1.11	2.27	2.89	2.88	3.71	3.69	4.63	3.69	4.63	4.60	8.84	8.65	16.29
150	2.02	3.23	1.18	2.43	3.09	3.09	3.98	3.96	4.96	3.96	4.96	4.94	9.47	9.25	17.44
160	2.15	3.45	1.26	2.60	3.30	3.30	4.24	4.23	5.30	4.23	5.30	5.27	10.11	9.86	18.60
170	2.29	3.66	1.33	2.76	3.51	3.51	4.51	4.49	5.63	4.49	5.63	5.60	10.74	10.47	19.75
180	2.42	3.88	1.40	2.92	3.72	3.72	4.78	4.76	5.96	4.76	5.96	5.93	11.38	11.08	20.91
190	2.56	4.09	1.48	3.09	3.93	3.92	5.05	5.02	6.30	5.02	6.30	6.27	12.01	11.69	22.06
200	2.69	4.31	1.55	3.25	4.13	4.13	5.31	5.29	6.63	5.29	6.63	6.60	12.65	12.29	23.22
250	3.37	5.38	1.91	4.07	5.17	5.17	6.65	6.62	8.29	6.62	8.29	8.27	15.82	15.33	28.99
300	4.04	6.46	2.28	4.89	6.21	6.21	7.98	7.95	9.96	7.95	9.96	9.93	19.00	18.37	34.77
350	4.71	7.54	2.65	NA											

Note:
- *The values in the tables are approximate and may be slightly different from the actual measurements.*
- *In case of ceiling mount, it is necessary to match at the spot.*

Timing Mode Table

Signal Type	Resolution	Frame rate (Hz)	VGA	HDMI 1/2	DVI	HDBaseT
PC	640 x 350	85	V	V	V	V
	640 x 400	85	V	V	V	V
	640 x 480	59	V	V	V	V
	640 x 480	60	V	V	V	V
	640 x 480	72	V	V	V	V
	640 x 480	75	V	V	V	V
	640 x 480	85	V	V	V	V
	720 x 400	60	V	V	V	V
	720 x 400	85	V	V	V	V
	768 x 480	60	V	V	V	V
	768 x 480	75	V	V	V	V
	768 x 480	85	V	V	V	V
	800 x 600	50	V	V	V	V
	800 x 600	56	V	V	V	V
	800 x 600	60	V	V	V	V
	800 x 600	72	V	V	V	V
	800 x 600	75	V	V	V	V
	800 x 600	85	V	V	V	V
	800 x 600	120	V	V	V	V
	848 x 480	50	V	V	V	V
	848 x 480	60	V	V	V	V
	848 x 480	75	V	V	V	V
	848 x 480	85	V	V	V	V
	960 x 600	50	V	V	V	V
	960 x 600	60	V	V	V	V
	960 x 600	75	V	V	V	V
	960 x 600	85	V	V	V	V
	1024 x 768	60	V	V	V	V
	1024 x 768	75	V	V	V	V
	1024 x 768	85	V	V	V	V
	1024 x 768	120	V	V	V	V
	1064 x 600	50	V	V	V	V
	1064 x 600	60	V	V	V	V
	1064 x 600	75	V	V	V	V
	1064 x 600	85	V	V	V	V
	1152 x 720	50	V	V	V	V
	1152 x 720	60	V	V	V	V
	1152 x 720	75	V	V	V	V
	1152 x 720	85	V	V	V	V
	1152 x 864	60	V	V	V	V

Signal Type	Resolution	Frame rate (Hz)	VGA	HDMI 1/2	DVI	HDBaseT
PC	1152 x 864	70	V	V	V	V
	1152 x 864	75	V	V	V	V
	1152 x 864	85	V	V	V	V
	1224 x 768	50	V	V	V	V
	1224 x 768	60	V	V	V	V
	1224 x 768	85	V	V	V	V
	1280 x 720	50	V	V	V	V
	1280 x 720	60	V	V	V	V
	1280 x 720	75	V	V	V	V
	1280 x 720	85	V	V	V	V
	1280 x 720	120	V	V	V	V
	1280 x 768	60	V	V	V	V
	1280 x 768	75	V	V	V	V
	1280 x 768	85	V	V	V	V
	1280 x 800	50	V	V	V	V
	1280 x 800	60	V	V	V	V
	1280 x 800	75	V	V	V	V
	1280 x 800	85	V	V	V	V
	1280 x 960	50	V	V	V	V
	1280 x 960	60	V	V	V	V
	1280 x 960	75	V	V	V	V
	1280 x 960	85	V	V	V	V
	1280 x 1024	50	V	V	V	V
	1280 x 1024	60	V	V	V	V
	1280 x 1024	75	V	V	V	V
	1280 x 1024	85	V	V	V	V
	1356 x 960	50	—	—	V	—
	1356 x 960	60	—	—	V	—
	1356 x 960	75	—	—	V	—
	1356 x 960	85	—	—	V	—
	1360 x 768	50	V	V	V	V
	1360 x 768	60	V	V	V	V
	1360 x 768	75	V	V	V	V
	1360 x 768	85	V	V	V	V
	1366 x 768	60	V	V	V	V
	1400 x 900	60	V	—	V	—
	1400 x 1050	50	V	V	V	V
	1400 x 1050	60	V	V	V	V
	1400 x 1050	75	V	V	V	V
	1440 x 900	60	V	V	V	V
	1440 x 900	75	V	V	V	V
	1600 x 900	60	V	V	V	V
	1600 x 1200	50	V	V	V	V

Signal Type	Resolution	Frame rate (Hz)	VGA	HDMI 1/2	DVI	HDBaseT
PC	1600 x 1200	60	V	V	V	V
	1680 x 1050	50	V	V	V	V
	1680 x 1050	60	V	V	V	V
	1680 x 1050	75	V	—	—	—
	1704 x 960	50	V	V	V	V
	1704 x 960	60	V	V	V	V
	1704 x 960	75	V	—	—	—
	1704 x 960	85	V	—	—	—
	1728 x 1080	50	V	V	V	V
	1728 x 1080	60	V	V	V	V
	1864 x 1050	50	V	V	V	V
	1864 x 1050	60	V	V	V	V
	1864 x 1050	75	V	—	—	—
	1920 x 1080	50	V	V	V	V
	1920 x 1080	60	V	V	V	V
	1920 x 1200RB	60	V	V	V	V
	1920 x 1200RB	50	V	V	V	V
	2128 x 1200	60	V	—	—	—
SDTV	480i	60	V	V	V	V
	576i	50	V	—	—	—
EDTV	480p	60	V	V	V	V
	576p	50	V	V	V	V
HDTV	1080i	25	V	V	V	V
	1080i	29	V	V	V	V
	1080i	30	V	V	V	V
	720p	50	V	V	V	V
	720p	59	V	V	V	V
	720p	60	V	V	V	V
	1080s	23	—	—	V	—
	1080s	24	—	—	V	—
	1080p	23	V	V	V	V
	1080p	24	V	V	V	V
	1080p	25	V	V	V	V
	1080p	29	V	V	V	V
	1080p	30	V	V	V	V
	1080p	50	V	V	V	V
	1080p	59	V	V	V	V
	1080p	60	V	V	V	V

Signal Type	Resolution	Frame rate (Hz)	VGA	HDMI 1/2	DVI	HDBaseT
Mandatory 3D	Frame Packing 1080p	24	—	V	V	V
	Frame Packing 720p	50	—	V	V	V
	Frame Packing 720p	60	—	V	V	V
	Side by Side 1080i	50	—	V	V	V
	Side by Side 1080i	60	—	V	V	V
	Top and Bottom 720p	50	—	V	V	V
	Top and Bottom 720p	60	—	V	V	V
	Top and Bottom 1080p	24	—	V	V	V
Frame Sequential 3D	1024x768	120	—	V	V	V
	1280x720	120	V	V	V	V

V : Frequency supported

— : Frequency not supported

Projector Dimensions

484mm

509mm

529mm

181mm

190.9mm
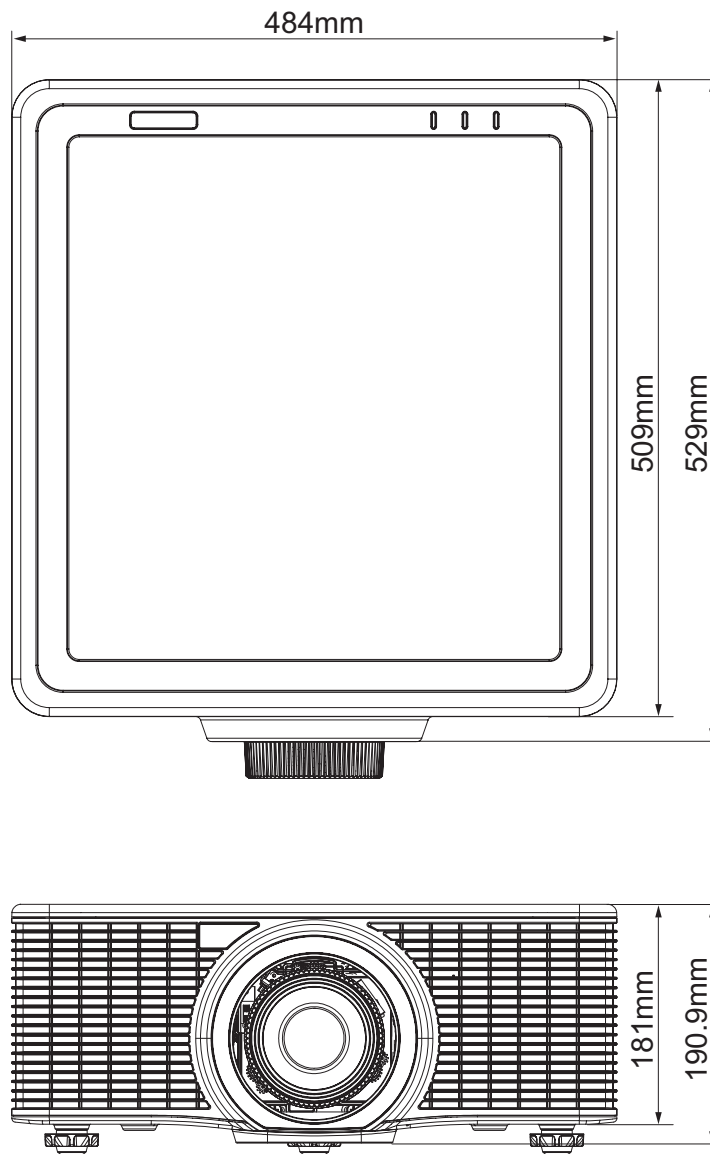
Regulatory Compliance

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications not expressly approved by the parties responsible for compliance could void the user's authority to operate the equipment.

Canada

This class A digital apparatus complies with Canadian ICES-003.

Safety Certifications

cTUVus, FCC, CE, CB, CCC, KC/KCC

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